

Approved by the Board of Education on June 22, 2026



GREENWICH PUBLIC SCHOOLS

EDUCATIONAL SPECIFICATIONS

June 5, 2026

Greenwich High School Natatorium, Tennis Courts & Access Driveway

10 Hillside Road
Greenwich High, CT 06830



PREPARED FOR:

Greenwich Board of Education
290 Greenwich Ave.
Greenwich, CT 06830

OWNER'S CIVIL ENGINEER:

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CONSTRUCTION
SOLUTIONS GROUP

M/E/P ENGINEERS:



Consulting
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STRUCTURAL ENGINEERS:



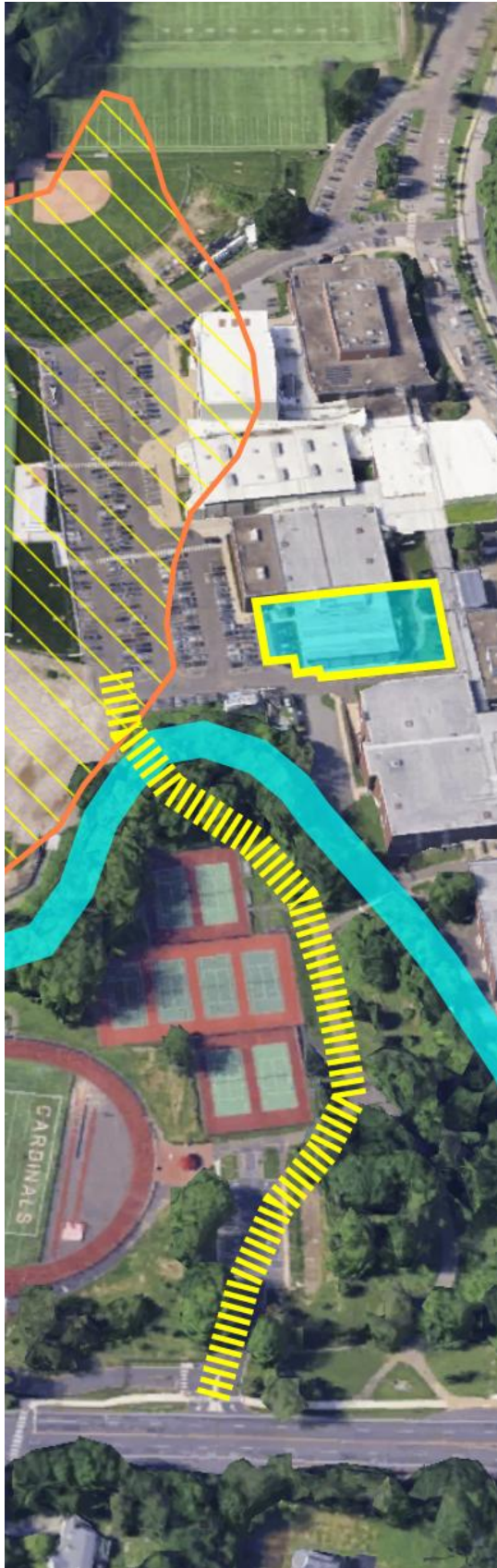


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TLBA Facility Assessment: March 3, 2025

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Project Background & Overview

These Educational Specifications were originally commissioned to address the aging pool facility at Greenwich High School. After initial concepts were developed between April and November of 2025, community feedback made it clear that the high school's tennis courts and long-planned Cardinal Access Driveway also needed to be addressed to support effective long-range master planning. Although the GHS campus encompasses 54 acres, its usable space is constrained by the size of the main building, parking and vehicular circulation needs, West Brothers Brook, and soil conditions associated with fill placed on the site in the 1970s. Greenwich High School also supports 42 varsity athletic teams across the fall, winter, and spring seasons, making available campus space especially limited. For these reasons, any major programmatic improvement must be considered in the context of the campus as a whole.

GHS Natatorium Background:

The existing natatorium at Greenwich High School was constructed in 1968 as part of the school's main building. It includes an eight-lane, 25-yard pool with a 1-meter diving board in a steel-framed building enclosure. The facility was renovated in 1997. Main drain covers were replaced in 2008 following enactment of the Virginia Graeme Baker Pool and Spa Safety Act (VGBA), and the pool deck and deck drainage were updated in 2023. The locker rooms were also updated recently. Although routine maintenance has continued, no other major work has been completed over the past 28 years.

In early 2025, GPS Facilities identified leaks and ponding water at the pool deck. In response, GPS commissioned a technical facility assessment by TLB Architecture, LLC (TLBA), a firm specializing in aquatics design. Architect Michael Fortuna of TLBA issued a full report on March 3, 2025. Included as an appendix to this document, the report identified the need for major drainage-system repairs below the pool and noted that the filtration system had reached the end of its useful life. More significantly for long-range planning, the report also identified several areas of fundamental noncompliance with current codes and laws. The most pressing issues include:

- **Diving Clearances:** There is an existing steel girder approximately 12 feet above and 6'-2" ahead of the diving board. This is more than four feet less than required by NCAA regulations, which are incorporated by reference into Department of Public Health (DPH) regulations.
- **Pool Deck Accessibility:** The DPH requires five feet clear, minimum, around the pool to allow for accessibility and emergency access. The area between the pool deck and the locker rooms is just over three feet wide.
- **VGBA Compliance:** Although VGBA-compliant drain covers were installed shortly after the enactment of the law, the existing sump and pipe configuration below the covers is considered noncompliant by the law as currently applied.

- Three of the four pool main drains are currently blocked, creating the potential for suction entrapment. An emergency pump shutdown switch has been installed in response to this issue. Clearing the blocked drains risks blowing out a drainpipe below the pool's 5-foot-thick gravity slab.
- **Pool Mechanical Systems in Electrical Room:** The existing recirculation, filtration and chemical control systems are in a utility room shared with a high voltage (480V) main distribution panel that serves roughly half the school. The pool's mechanical systems are at the end of their useful life. When they are replaced, they should be placed in an area separate from the high voltage equipment.
 - The pool filter system is currently configured to backwash into West Brothers Brook, the small public watercourse running through school property; this discharge is chlorinated graywater which should be routed to a sanitary sewer per DPH Guidelines.

The TLBA report outlined planning options to address these issues, but meaningful corrective work would be costly, require the pool to be taken out of service, and significantly affect the aquatics program. The Greenwich Board of Education therefore established a feasibility committee to evaluate a broad range of planning alternatives and determine the best path forward. The pool remains open for now, but the diving board has been secured in an upright position, and the GHS Diving Team has been temporarily relocated to the YMCA of Greenwich.

The Greenwich High School swim program is a powerhouse and a point of pride for the community. The GHS Cardinals swimming and diving teams have collectively won 143 state championships. Excellence in aquatics is also evident in the school's educational program, which includes swimming and lifeguarding classes that build lifelong water-safety and survival skills for students.

GHS aquatics teams travel extensively for competition and host multiple meets and other events. Greenwich High School currently has the only high school pool in Fairfield County suitable for hosting the Fairfield County Interscholastic Athletic Conference (FCIAC) Swimming Championships.

GHS Tennis Background:

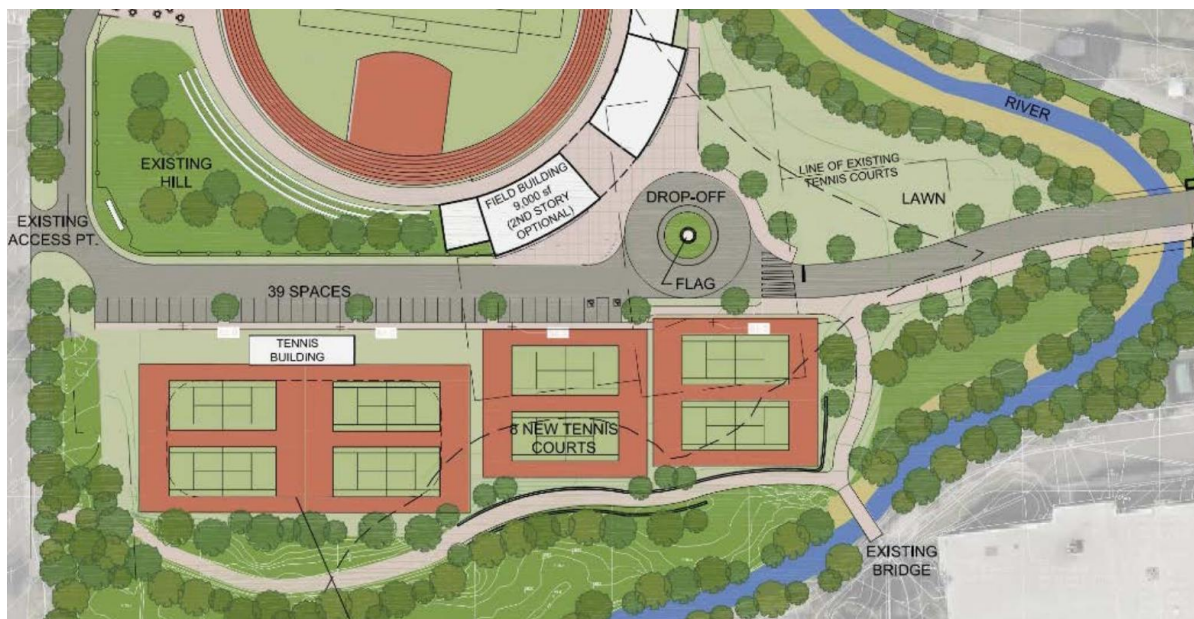
There are currently eight hard tennis courts on the GHS campus, clustered south of West Brothers Brook near the new football stadium. Retaining walls border portions of the court area, and the two southernmost courts sit several feet higher than the others, possibly because of existing granite ledge. The courts are fenced, and limited aluminum bleacher seating is provided east of the northernmost pair of courts. The courts are cracked and nearing the end of their useful life and are due to be replaced with new post-tensioned concrete slabs.

The GHS tennis courts are used by the boys' and girls' varsity teams for both practice and competition. The tennis community has emphasized that maintaining at least six, but preferably all eight, courts on the high school campus is critical to team cohesion. GHS tennis is also among the most successful programs in the state; the Cardinals boast 62 FCIAC and state championships won across the boys' and girls' teams.

The tennis program is currently spread across three campuses, with junior varsity teams practicing at Central and Western Middle Schools. Although tennis remains listed in the curriculum, it has not been taught in GHS physical education classes for the past eight years. While capital projects related to tennis are the responsibility of the Board of Education, the courts are maintained and scheduled for public use by Greenwich Parks & Recreation.

GHS Cardinal Access Driveway Background:

Because there is no vehicular bridge over West Brothers Brook, the high school building and parking areas have no direct access from East Putnam Avenue (Route 1), forcing all school-related traffic onto Hillside Road, a two-lane residential secondary road. This condition has long contributed to chronic congestion and parking problems on both Hillside Road and Route 1 and may restrict police and fire access to the school during an emergency. Providing secondary vehicular access from Route 1 has been a longstanding community goal and has been discussed for at least a decade. Plans for Cardinal Stadium showed an access drive connecting Route 1 to the parking area west of the high school via a vehicular bridge as early as 2017; those plans also consistently showed the relocation of the existing tennis courts to the south and east of their current location. No comprehensive long-range plan for the GHS campus is complete without addressing this access need.



Cardinal Field Study Progress Report, October 2017, KG+D Architects

Evolution of the Feasibility Committee and Educational Specifications:

In April 2025, Greenwich Public Schools retained Antinozzi Associates, together with a consultant team including TLBA, to support the newly formed GHS Natatorium Feasibility Committee. The committee was charged with working with the design team to develop Educational Specifications for Board of Education consideration and approval. From the outset, the committee sought to balance the urgent needs of the existing pool with responsible long-range planning.

On November 20, 2025, the design team presented the leading natatorium concepts to the Greenwich Board of Education at a public meeting. At that time, the committee's preferred concept placed a new facility in the area of the tennis courts, incorporated a new access driveway, and proposed relocating the tennis courts to North Street Elementary School, approximately 1.6 miles away. A strong alternative, also presented for consideration, proposed constructing a new natatorium in approximately the same location as the existing pool wing. The proposed facility's footprint would overlap and extend beyond the current footprint and would require the GHS pool to be offline for the full two-year construction period.

Following that presentation, the Board of Education, collaborating with civil engineers at AECOM, engaged the tennis community regarding the proposed relocation of courts from the GHS campus to North Street School. In December 2025, the Board received clear feedback that relocating all varsity courts off campus would not be acceptable. Community members noted that all 15 competing GHS schools in lower Fairfield County maintain varsity tennis courts on their high school campuses.

In response, the Board of Education brought AECOM together with the design team to adjust and expand the Educational Specifications. Working collaboratively, the team re-examined feasible site arrangements that could accommodate one of the two leading natatorium concepts, a new Cardinal Access Driveway, and at least six tennis courts on campus.

The feasibility committee reconvened in March 2026 to review revised options and broaden its mission. Key changes to the committee's structure and charge included:

- The former GHS Natatorium Feasibility Committee was renamed, and became the **GHS Natatorium, Tennis, and Access Driveway Feasibility Committee**.
- New committee members representing the tennis community were welcomed.
- The committee's charge was expanded to develop and deliver Educational Specifications not only for a new GHS natatorium, but also for new tennis courts and a new Cardinal Access Driveway on the high school campus.

The GHS Natatorium, Tennis & Access Driveway Feasibility Committee:

The Greenwich High School Natatorium, Tennis, and Access Driveway Feasibility Committee was formed to guide planning for facilities that provide a safe, comfortable, and code-compliant environment while supporting student development and improving campus access. To that end, these Educational Specifications were developed in collaboration with committee members over the course of fourteen meetings and six focus groups held between April 8, 2025, and April 28, 2026.

The design team assembled baseline information, developed multiple concepts, and refined those concepts through committee discussion and feedback. The recommendations presented in these Educational Specifications are the result of that iterative process. Committee members include:

Dr. Toni Jones, Superintendent of Greenwich Public Schools, Committee Chair
Ben Branyan, Chief Financial & Administrative Officer, Greenwich Public Schools
Sophie Koven, Board of Education, Greenwich Public Schools
Dan Watson, Director of Facilities, Greenwich Public Schools
Ralph Mayo, Principal, Greenwich High School
Liv DiLascia, Girls Diving Coach, Greenwich High School
Peter Georgiou, Athletic Director, Greenwich High School
Brendan Heller, Girls Swim Team Coach, Greenwich High School
Terry Lowe, Boys Swim Team Coach, Greenwich High School
James Ramaley, Water Polo Coach, Greenwich High School
Harry Fisher, Chair of Greenwich Board of Estimation & Taxation (2025)
Laura Erickson, Budget Chair, Greenwich Board of Estimation & Taxation (2026)
Joseph Pellegrino, Greenwich Board of Estimation & Taxation (2026)
Kara Mendelsohn, Community Member
Alex Orbanowski, Community Member (2026)
James Waters, Community Member, Chair of RTM Budget Overview Committee
Jason Wilber, Community Member (2026)
Michael Doherty, AECOM (Environmental & Civil Engineering for GPS)
Jacob Mabee, AECOM (Environmental & Civil Engineering for GPS)
Dan Seramet, AECOM (Environmental & Civil Engineering for GPS)
Fran DiFiore, Construction Solutions Group (Design Team – Educational Specifications)
Michael Fortuna, AIA, TLB Architecture (Design Team – Architect, Aquatics Specialist)
Paul Lisi, AIA, Antinozzi Associates (Design Team – Architect)
Lisa Yates, AIA, LEED AP, Antinozzi Associates (Design Team – Architect)

Focus Groups & Faculty Interviews:

The project's focus groups were well attended and productive. Attendees learned about the project, and provided detailed, practical input to inform committee decisions. Participants shared perspectives ranging from technical requirements to operational concerns, with consistent emphasis on student well-being.

Faculty Interviews

April 23, 2025

The design team spent the day at Greenwich High School conducting detailed interviews with Principal Ralph Mayo, Athletic Director Peter Georgiou, Boys Swim Coach Terry Lowe, Girls Swim Coach Brendan Heller, and Water Polo Coach James Ramaley, all of whom serve on the Feasibility Committee. These interviews allowed the team to review program requirements in depth and focus on detailed technical requirements.

Focus Group 1 - Greenwich Board of Education (BOE) Members

May 21, 2025

Approval of the Educational Specifications ultimately rests with the Board of Education, so incorporating BOE feedback throughout the process was essential. This session was attended by BOE Chair Karen Hirsch and BOE members Sophie Koven and Michael-Joseph Mercanti-Anthony. Discussion focused on the schedule and cost of the options under study, the potential role of private fundraising, concerns about disruption to the aquatics program during construction, and the safety and ongoing maintenance of the existing pool.

Focus Groups 2 & 6 - Parents and Students of the Aquatics Community

May 28, 2025, with follow-up session held April 28, 2026

This process kicked off with a spirited double session including nearly thirty members of the aquatics community. Participants, including several alumni parents who had competed in high school swimming, offered both technical and practical feedback on capacity, spectator seating, deck space, team rooms, cleanliness in a wet environment, and other operational needs. Nearly all attendees expressed deep concern about maintaining continuous pool access for high school athletes, both during construction and in the near term given the condition of the current facility. In the 2026 follow-up session, participants voiced strong support for a relocated natatorium, citing program continuity and increased space for athletics.

Focus Group 3 - Greenwich Club Leadership

June 17, 2025, and June 24, 2025

The strength of GHS aquatics begins with the community's feeder programs. Greenwich-based programs serving high-school-bound students include the YWCA Dolphins, YMCA Marlins, and Boys & Girls Club Barracudas. The first meeting was held with YWCA Coach Nick Cavataro. In addition to his YWCA role, Nick is in his 41st year as a Division I college coach at Iona University and leads the swim program at Westchester Country Club. A follow-up session was later held with Kim Tierney Wang, Director of Aquatics at the YMCA.

Nick shared that a nationwide lifeguard shortage has emerged because of changing liability conditions and because physical education degree programs are less likely than in the past to require lifeguard certification. That context reinforced the importance of the lifeguarding curriculum at GHS. Because the YWCA's 25-yard, six-lane pool was recently rebuilt, Nick was also able to share recent lessons learned about living through construction and relying on other community pool facilities, including GHS, for temporary accommodation. The long history of mutual support between the high school and community pools was also highlighted in conversations with Kim Tierney Wang, who provided valuable insight into operating the YMCA's 50-meter Olympic-size pool, where energy management is a major consideration.

Focus Group 4 - Greenwich High School Neighbors

November 12, 2025

This session revealed broad support for the project among neighbors, particularly residents of Hillside Road, in large part because of strong interest in the long-awaited access driveway. Participants recommended that an overall traffic plan accompany the project if it moves forward. The group also discussed coordination with the Connecticut Department of Transportation's upcoming replacement of the section of Route 1 crossing Greenwich Creek, the outfall south of West Brothers Brook.

Focus Group 5 - Greenwich Tennis Community

December 9, 2025

This meeting was a key step in bringing concerned members of the tennis community into the planning process and, ultimately, onto the committee. The minimum number of tennis courts that should remain on site (six) was discussed in depth.

Other Groups

The team also reached out to other groups that use the Greenwich High School pool, including Special Olympics and the Greenwich Police, EMS, and HR offices. Responding groups did not provide specific programmatic recommendations, but they affirmed the value of the pool as a community asset.

Project Approach & Rationale

The Feasibility Committee worked collaboratively to establish mandates, priorities, and preferences for Greenwich High School's natatorium, tennis courts, and new access driveway. These Educational Specifications serve as the project roadmap. Together with the conceptual design, scoping specifications, and cost estimate, they present an approach that meets programmatic goals while addressing the complexities of building on an extremely active campus with significant site constraints, environmental considerations, regulatory requirements, and a highly engaged local community.

The committee began its review of the natatorium with "all options on the table," ranging from minimal repairs to new facilities that would significantly expand the program. In total, six primary approaches were studied; including sub-variants, eleven options were evaluated.

The committee narrowed the field to the two most feasible options. Both proposed a new natatorium structure housing a 35-meter short-course stretch pool with ample dry-land space on the pool deck and spectator seating on a mezzanine level above the pool. Option A (originally developed as Option 4.1) proposed a new natatorium in the same general location as the existing pool wing. Option B (originally developed as Option 5) proposed a new natatorium in the area of the tennis courts or elsewhere on the high school campus. Detailed cost estimates were prepared for the building component of both options, and each was then advanced with further site plan development incorporating the new tennis courts and Cardinal Access Driveway.

OPTION A: SELECTED CONCEPT & BASIS OF EDUCATIONAL SPECIFICATIONS

In-Place Reconstruction of Natatorium and Tennis Courts; New Cardinal Access Driveway

Under this option, the new natatorium will be constructed in the same general location as the existing pool, extending east to accommodate a larger footprint. The facility will provide a state-of-the-art competitive aquatics environment with adequate capacity and proper depths for all anticipated aquatic activities. Unlike the existing pool wing, the new natatorium will clearly separate spectators from athletes and will include public restrooms and a dry spectator mezzanine with elevator access. The elevator also has the potential, as configured in the drawings, to provide ADA access to a portion of the existing second floor currently served by stairs only.

Because the natatorium will remain in its original location, the area south of West Brothers Brook has space to accommodate eight tennis courts along with a new access driveway connecting Route 1 to the high school's west parking lot. Option A therefore replaces the existing courts with eight new post-tensioned concrete courts in the same general location. Each court grouping includes two sheltered benches and bleacher seating. The access driveway will use the curb cut recently constructed with the stadium. Existing stadium parking and the adjacent rain garden will be reconfigured and replaced to allow the driveway to pass east of the tennis courts. Pedestrian walkways will be

maintained and realigned along the length of the new Cardinal Access Driveway, which will cross West Brothers Brook via a new vehicular bridge before terminating at the west parking lot.

Because Option A uses the existing pool-wing location, it will take the pool offline for at least 18 months. A temporary solution is therefore required to support the aquatics program during construction. The Board of Education is currently coordinating with the Greenwich High School Athletics Department and local community pool providers, including the Greenwich YWCA, YMCA, and Boys & Girls Club, to secure adequate pool time during that period. These community partners recognize the importance of maintaining the Cardinals swimming and diving programs and have expressed a willingness to assist.

The conceptual project cost for the natatorium component of Option A is estimated at \$46,851,317, excluding any costs associated with temporary relocation of the aquatics program. The conceptual sitework cost, including the tennis courts, vehicular bridge, roadway, and related work, is estimated at \$12,976,500. In total, the conceptual project cost for Option A is **\$59,827,817**.

OPTION B: INCLUDED FOR REFERENCE ONLY

Relocation of Natatorium and Tennis Courts; New Cardinal Access Driveway

Although carefully studied and developed, Option B was eliminated from consideration and is not a focus of these Educational Specifications. A primary advantage of this approach was its ability to phase construction in a way that would allow continuous operation of the aquatics program on campus. Option B fully utilized the area south of West Brothers Brook, fitting a new natatorium, six new post-tensioned concrete tennis courts, and a new access driveway connecting Route 1 to the high school's west parking lot within a limited footprint. Every potentially feasible on-campus location for a new natatorium was considered, and this arrangement was deemed the most feasible primarily because of limited space elsewhere and compromised soils in the area of the existing fields, many of which have recently been equipped with artificial turf.

The natatorium in this option was located in an area known to contain granite ledge. An elevated pool deck was proposed to minimize costly ledge removal below the pool, creating a potentially useful residual shell space below which could help address other campus space needs. Because the new natatorium would be separate from the high school building's existing locker area, the option also required new locker rooms and staff space, further increasing the building area. In addition, the former pool wing would be retained and converted into a new auxiliary gymnasium. Despite these potential benefits, the option proved to be significantly more expensive, with a total estimated project cost of **\$74,080,032** (\$59,430,732 for the natatorium and \$14,649,300 for site components).

General Requirements and Goals

See “Program Space Requirements” Section for specific requirements

Site Components: Tennis Courts & Cardinal Access Driveway

The tennis community clearly communicated that retaining courts on the high school campus is a major goal for the program moving forward so that varsity teams can practice and host competitions on site. To achieve that goal, at least six courts are required, with eight preferred and ideally located in the current general area. Open bleacher seating positioned perpendicular to the net is required, along with sheltered bench seating.

The Cardinal Access Driveway must provide emergency responders with reliable vehicular access to the school at all times. This is the driveway’s primary purpose and a critical need when congestion restricts access from Hillside Road. As a secondary benefit, the driveway should be used in a controlled manner to help relieve traffic congestion during arrival, dismissal, and school events. It will also connect stadium event parking to the school.

Natatorium

As noted earlier, the committee evaluated a wide range of approaches to the natatorium before broadening its focus to include the tennis courts and Cardinal Access Driveway.

The following summary describes key factors used to evaluate the natatorium options.

Natatorium Programmatic Considerations

1a - Educational Program Requirements: A shallow water area, four feet or less in depth, is required for aquatics and life-saving classes, both of which are GHS curriculum offerings. An offsite pool would effectively eliminate swim classes from the curriculum.

1b - Swim Team Requirements: At least eight 25-yard lanes are required for the swim team, and more are desired, ideally with starter blocks in water at least six feet deep. Adequate dry land space on the pool deck for equipment and warm-ups is required.

1c - Diving Team Requirements: Diving clearances must meet NCAA requirements, with ample space in the diving well and at least 16’-5” clear within the diving area above a 1-meter standard board. Two 1-meter diving boards are preferred. If feasible, an adjacent hot tub for warm-up is desirable.

1d - Water Polo Team Requirements: Pool space at least 30 meters by 20 meters, at least 2 meters deep, with a minimum of 7 meters clear above the surface of the water is required, in accordance with Guidelines.

1e – Goal – Minimize Disruption of Facility Schedule due to Construction: Any temporary construction condition which takes the facility offline during the swim, dive and water polo seasons (Fall, Winter, and Spring) must be mitigated throughout the school year with

a satisfactory temporary pool space alternative to meet the needs of the GHS aquatics programs.

1f – Goal – Improve long-term facility function and capacity: All potential options for addressing the current pool facility issues are costly and/or disruptive, and the GHS aquatics program is championship-caliber. Given the level of baseline investment required, the project should result in a premier swimming venue with improved utility and capacity.

1g – Upper-tier seating; separation required: Spectator seating must be elevated and separate from the pool deck and athlete seating, ideally via the introduction of an upper level for seating. Separation of spectator seating is a regulatory requirement.

Natatorium Site Considerations

2a – Construction Schedule: Continuous construction that minimizes disruption to operations of GHS is preferred.

2b – Impact to Soils and Groundwater: The site has a large area of polluted and/or contaminated fill placed in 1968-79 during the construction of the current school, and costly remediation has been performed to mitigate potential negative impacts to the watercourse on site. Avoiding areas that require further soil remediation for construction is preferred.

2c – Impact on GHS Utilities: There are numerous active underground utilities on site, along with above-ground power generation and cooling plants. Minimizing disturbance to these areas is preferred, and construction activities cannot interrupt service to the high school.

2d – Impact on GHS Parking: On-site parking is a limited resource and should not be reduced.

2e – Impact on Lunch Courtyard East of Existing Pool Facility: This courtyard is a place for the five houses of GHS to come together. While its size may be reduced slightly, it should not be eliminated. It should also be noted that many underground utilities are located below this courtyard.

2f – Planning and Zoning Feasibility: The existing school exceeds the maximum allowable floor area ratio onsite, so any additional area on any floor will require a variance. The project design should be a good neighbor to facilitate variance approval by the commission and the community and should maximize zoning compliance. Regulated activities within the 100-foot upland review area for the watercourse on site are subject to review by the Inland Wetlands and Watercourse Agency.

Natatorium Cost Considerations

3a – BOE Additional Transportation Costs: Any swimming facility not located on the high school campus will cause the BOE to incur additional costs for student transportation. The natatorium must be located on the high school campus.

3b – BOE Additional Staffing Costs: Additional staffing required by expansion of the program on campus is acceptable. Additional staffing related to an offsite facility, including but not limited to duplication of swim teachers, coaches and custodial staff, is not acceptable.

3c – Total Project Cost: The cost of the project is an important consideration with greater weight than most other individual factors.

3d – Potential for Private Donations: It is believed that significant private donations may be granted for a championship-caliber facility with expanded capacity for spectators and events.

3e – Additional Monetization Opportunities: Large pool facilities with spectator seating, suitable for competitive events, have strong potential to generate additional rental income, offsetting operational costs.

These parameters were considered in addition to the baseline requirements described in the Program Space Requirements section of this document and the minimum standards established in the Conceptual Specifications for cost-estimating purposes.

Together, these requirements and considerations are intended to produce:

- A high-quality, state-of-the-art natatorium facility, tailored to the needs of the Greenwich aquatics community
- New tennis courts that improve and continue the tradition of high-level competitive tennis on the Greenwich High School campus
- Provision of a long-awaited access driveway to provide a secondary means of ingress and egress to this busy site, improving daily life of the high school community and its neighbors

Long Range Educational Plan

Mission and Vision

It is the Mission of the Greenwich Public Schools to educate all students to the highest levels of academic achievement, to enable them to reach and expand their potential and to prepare them to become productive, responsible, ethical, creative, and compassionate members of society.

The Board of Education approved a new Greenwich Public Schools Strategic Plan in the spring of 2023 and will continue the plan through 2027.

The Strategic Plan is organized in support of seven Goals:

- Mastery of Reading
- Mastery of Mathematics
- Mastery of Science
- Enhanced Graduation Rate
- Increase in Family and Community Engagement
- Increase in Student Sense of Belonging
- Increase in Positive Working Environment for Teachers and Staff

Greenwich High School is committed to improvements which align with the mission of the district, driving outstanding leadership, scholarship, and a supportive environment for students, staff, and families. GHS is committed to the development of the whole person, supporting each individual to reach their potential while fostering a collective vision of collaboration, kindness, academic excellence, and support for the social and emotional well-being of students.

Since 1906, the vision of Greenwich High School has not wavered from developing high-performing students in a safe and nurturing environment. The school has evolved over more than a century, adapting facilities and structure to serve a growing and changing student body. Serving approximately 2,700 students, GHS is currently one of the largest high schools in the state of Connecticut, and one of the highest performing. The school's large size feels personal and connected thanks to its organization into five Houses (Bella, Cantor, Clark, Folsom, and Sheldon) each with separate administrators, guidance counselors, and support.

Teachers, students, and families are proud of the rich tradition of excellence at GHS, the Town of Greenwich strongly supports its public high school, with notable alumni engagement and enthusiastic community support. GHS is a focal institution in the community, and its campus assets, like the recently opened Cardinal Stadium, benefit the Greenwich public.

GHS offers high quality facilities to support students in their journey to college and careers. The Greenwich Cardinals Swim, Dive and Water Polo teams are part of a larger Cardinal family; GHS fields more than 40 varsity athletics teams.

Learning / Educational Activities - Physical Education

The goal of the Wellness and Physical Education Program in Greenwich Public Schools is to develop physically literate individuals who have the knowledge, skills and confidence to enjoy a lifetime of healthy physical activity.

The existing pool facility is in high demand. In addition to physical education classes, four teams are active in the fall, and two are active in the winter and spring. Practices are typically staggered with a half hour overlap. Long practice times are typical for aquatics teams, so practice sessions are often scheduled very early or very late. A larger capacity pool would mitigate these issues.

AQUATICS – EDUCATIONAL PROGRAM

The GHS curriculum includes two types of aquatics classes.

Swimming

Students learn basic swimming skills, survival skills, and water safety knowledge to become safer around the water. Per the American Red Cross, drowning is the second leading cause of death for children aged 5-14 in the United States. All students not “testing out” were once required to take part in a multi-week swimming course prior to graduation. This program is currently an elective, but if a new facility creates more readily available pool time, the former curriculum requirement may be reinstated. This program requires shallow water.

Lifeguarding

Students acquire the necessary skills to become a certified Lifeguard. This program is an elective and requires shallow water.

TEAM SPORTS

Boys and Girls Tennis

Tennis is a spring sport for both boys and girls. Each program includes a Varsity Team which plays on the GHS courts. The boys’ program includes two Sub-Varsity teams; the girls’ program includes Junior Varsity A (grades 9-11) and Junior Varsity B (grade 9). Non-varsity teams play on other courts, at Central Middle School and on other GPS courts.

Both Varsity Teams compete in the FCIAC league. Boys Varsity plays a 16-match regular schedule along with post-season FCIAC and a State Tournament. Boys Varsity boasts a recent 70-game winning streak. The Girls Varsity team also competes in the State LL division.

Swimming and Diving – Girls and Boys

GHS has Swimming and Diving Varsity teams for Girls and Boys; Varsity and Junior Varsity Teams are provided for each. The program aims to provide the best possible opportunity for swimmers/divers to work toward their potential as young athletes and to generate a cohesive team experience for the group.

With Coach Terry Lowe leading the way, the boys' team has won 52 Class LL state championships and 40 state open championships, thanks to depth, consistency and strong team culture. The girls' program has likewise achieved high levels of success, capturing 31 Class LL state championships and 20 state open championships in recent years. Greenwich High School's swimming, diving, and water polo programs rose to prominence in the early 1970s to form a long-lasting dynasty, representing the most successful and consistent high-school swimming program in the state of Connecticut.

The GHS program stands alone as the most decorated high school sports program in the state, regularly producing athletes who compete at the collegiate level and the US Olympic Trials.

Swimming candidates for the team attend an initial set of workouts generally lasting two weeks followed by a set of time trials to determine those who qualify for the team. Also, after two weeks diving candidates are selected based on the number of candidates and the "list" of dives they can perform. Generally, candidates are expected to have had some prior experience in competitive swimming or diving. Once formed, the Swimming and Diving teams consist of approximately 90 students in total, with roughly 30 athletes on each Varsity Team and around 15 athletes on each Junior Varsity Team.

The teams are typically divided into two practice groups; the more experienced and accomplished athletes in a Varsity A group; the remaining athletes in a Varsity B group. Practice consists of weightlifting and similar work on dry land along with time in the pool. Championship competitions may involve evenings and Saturdays.

As previously mentioned, diving must currently occur offsite due to noncompliance with NCAA headroom requirements. Even when the diving board was in use, the configuration of the pool does not allow for diving and lane swimming to occur at the same time.

Boys and Girls Water Polo

The Greenwich Water Polo Program is among the strongest on the east coast. Both the Boys and Girls Teams are known for excellence; the Boys' Team won the Mid-Atlantic Championship in 2018, and the Girls' Team came into 2025 with a four-year undefeated winning streak. The current pool is undersized for water polo, and increased pool depth and headroom across the entire field of play within the pool, in compliance with NCAA guidelines, would enhance the experience.

Water polo is a unique sport, with only a few local teams available for high-level competition. GHS Water Polo therefore travels out of state consistently, with trips to Maryland, Pennsylvania, California and other venues. The program asks a lot of its student athletes, and the season can be challenging, especially for incoming first-year students getting adjusted to high school life and added responsibilities.

The GHS water polo program was founded over 50 years ago and has been one of the strongest programs on the east coast. Over the past 20 years, water polo has grown in popularity in Greenwich with new club level programs hosted at both the Greenwich YMCA and Chelsea Piers. The Greenwich Aquatics program at the Greenwich YMCA regularly has teams that place in the top 10 in the nation at the annual Junior Olympics tournament. Many of the students who play on these club teams attend (or will attend) Greenwich High School, which has increased the level of play at the high school level, not only in GHS but also in the east coast. The GHS water polo program regularly produces athletes who compete at the collegiate level.

Building System Requirements

The proposed Greenwich High School Natatorium is expected to be a championship-caliber facility worthy of the excellence of the Aquatics Programs and capable of serving the high school's educational curriculum, with ample capacity for well-attended events. It should be an asset, not only to Greenwich Public Schools and the Greenwich community, but also to southwest Connecticut and the region at large.

Conceptual Technical Specifications were prepared to establish the expected level of construction and to provide detailed scope information for accurate cost estimating. The Conceptual Technical Specifications are included with this document to set the expected standard for the new GHS natatorium. Key considerations include:

- Durable construction for a wet environment, with little to no drywall and HVAC optimized for humidity control. Facility shall incorporate high-quality, long-lasting materials to serve GHS for the next fifty years. Finishes will be selected for ease of maintenance, durability, and aesthetics; all finishes must be reviewed with District Facilities.
- Security coordinated with District leadership security goals meeting school safety infrastructure requirements as determined by the CT School Buildings Advisory Council, per CT General Statutes.
- Natural, non-glare daylight and high-efficiency LED lighting; great acoustics.
- A state-of-the-art, “fast” championship pool with ample capacity for all high school swimmers and in compliance with appropriate sanctioning bodies for aquatic team and individual sports.
- Optimization for modern sport electronic and internet demands, with multiple cameras, state-of-the art timing system and scoreboard, and capability for remote scoring broadcasts.
- Ample upper-tier mezzanine spectator seating with elevator access for physical separation from the athletes and a dry viewing experience.
- Deck-level bleacher seating, primarily for athletes, with ample accommodation for both home and visiting teams.
- The facility will be fully accessible, with ADA compliance throughout.

Program Space Requirements

This section provides a list of required programmatic areas along with specific requirements for each space type. It is intended to be complimentary with the Building Space Program & Overall Area Tally section, which follows, and also with the previously referenced Technical Conceptual Specifications.

Core Aquatics, approximately 20,630 sq. ft.

Natatorium – Main Level Pool Deck: 1 – One Pool, 9,000 sq. ft.

Short-course-stretch pool with diving well and moveable bulkhead, Pool Shell, gutter, bulkhead and recirculation, filtration and chemical control systems, all by Myrtha Pools. Pool shall have the following minimum attributes:

- Size: 75 feet by 116 feet
- Depth: 11'-6" depth at diving well; at least 2 meters (6'-7") minimum depth for water polo, extending at least 30 meters (98'-6") from the diving end wall; shallow-depth water tapering up to 4-foot depth at the wall opposite the diving boards
- 7-meter (23-feet) clear height above the entire surface of the pool
- Two 1-meter diving boards
- Markers and floats for lane divisions parallel to the short end; markers for crossing lane marker divisions parallel to the long end, extending 25 meters from the diving board end. Provide diagrams for multiple lane and bulkhead configurations, coordinated with aquatics staff. 2.5-meter lane width is preferred.
- Competition Starting Blocks
- Deck and Diving Equipment
- Natatorium Scoreboard: Omega timing and scoring system for multiple aquatic activity scoring
- NCAA Guideline compliance is required for swimming, diving and water polo.

Natatorium – Main Level Pool Deck: Dry Land Space, approx. 7,500 sq. ft.

- Ample space for equipment, weights and dry land workout activities by multiple teams. Space can be made larger than indicated here by retracting bleacher seating for athletes.
- Mosaic tile flooring, floor area drains (typical throughout)
- Keep space within 5 feet of the pool bulkhead clear for access
- Wireless access points throughout (entire facility)

Natatorium – Main Level Pool Deck: 1 - One Warm-up Pool / Hot Tub, included on deck

- Warming pool at pool deck level, approximately 50 sf. Locate near diving area; do not obstruct 5-foot clear space around pool.

Natatorium – Main Level Pool Deck: Athlete Bleacher Seating, approx. 1,180 sq. ft.

- Manual telescoping seating for approximately 250 athletes
- Plastic seats with large-scale logos visible when stands are closed
- Distribute seating for good visibility of each sport

1 – One Scoring / Judging Platform, approx. 200 sq. ft.

- Raised platform with stair access
- Clear sightlines to pool competition areas.
- Separate from pool environment with glass; include sliding panels so platform can be opened for events
- Full compatibility with scoring system interface and cameras
- Scoring table and three chairs

1 – One Scoring / Judging Office, approx. 200 sq. ft.

- Accessed via adjacent Scoring / Judging Platform at same elevation
- Dry space with ample power, data and lighting for multiple monitors and scoring equipment
- Office desk w/computer and power/data, chair, 4 drawer file cabinet, lockable storage/wardrobe cabinet

3 – Three Coach / PE Offices, 510 sq. ft.

- Contains toilet/shower room
- Office desk w/computer and power/data, chair, 4 drawer file cabinet, lockable storage/wardrobe cabinet
- Collaboration Table with 4 chairs
- Interactive display
- Whiteboard and tackboard
- Direct access to pool deck

1 – One Meet Official's Shared Office, approx. 420 sq. ft.

- Contains toilet room
- 2 – Two each: Office desk w/computer and power/data, chair, 4 drawer file cabinet, lockable storage/wardrobe cabinet
- Collaboration Table with 6 chairs
- Interactive display
- Whiteboard and tackboard

1 – One Deck-Level Equipment Storage, approx. 600 sq. ft.

- Double doors
- Perimeter shelving and hanging storage
- Mosaic Tile and Area Drains

Public and Shared Space, approximately 5,880 sq. ft.

1 – One Entrance Vestibule, approx. 140 sq. ft.

- Security Glazing – hardened entrance
- Keycard access at both interior and exterior doors
- Walk-off mats (metal)
- Electronic security system hub
- Leads to Lobby

1 – One Lobby, approx. 940 sq. ft.

- Soft seating for ten; two side tables
- Tackboards
- Trophy display cases (two)
- Large-format porcelain tile flooring
- Electronic security system
- Adjacent to Ticket Office and Public Restrooms; can be locked off from remainder of facility

1 – One Ticket Office, approx. 380 sq. ft.

- Transaction counter with manual rolling counter shutter opening to Lobby
- Point of sale, associated power and data
- Office desk w/computer and power/data w/computer and power/data, chair, 4

drawer file cabinet, lockable storage/wardrobe cabinet

- Security monitors
- Whiteboard and tackboard
- Luxury vinyl tile flooring

1 – One Ticket Office Storage, approx. 320 sq. ft.

- Accessed via Ticket Office
- Perimeter shelving
- Luxury vinyl tile flooring

1 – One Alumni Room, approx. 1,300 sq. ft.

- Mezzanine Level adjacent to spectator seating
- ADA Unisex Family Restroom
- Counter with sink
- Bar-height counter with ten stools behind glass wall facing pool and power for charging devices
- Soft seating for ten; two side tables
- Tackboards and Whiteboard
- Trophy display case
- Luxury vinyl tile flooring

Mezzanine Level Spectator Seating, approx. 2,800 sq. ft.

- Fixed bleacher seating for 350 -450 spectators
- Plastic seats, no backs
- ADA seating areas per Code
- Distribute seating for good visibility of each sport
- Mezzanine level includes lobby-type areas to facilitate movement of spectators; equip these areas with power for device charging and tackboards

Locker Room Suite: Existing to Remain

Building Services and Core Area, approximately 2,380 sq. ft.

2 – Two Public Restrooms (Men & Women) approx. 310 sq. ft. each

- 7 toilet facilities; 4 sinks; mirror; changing table
- Large-format porcelain tile flooring
- Direct access from Lobby

2 – ADA Family Restroom, approx. 65 sq. ft. each

- Available for public / spectator use
- Large-format porcelain tile flooring
- ADA Compliant

1 – One MDF (Data) Room, approx. 134 sq. ft.

- Main server room with support for IT within Natatorium, including specialty switches and AV racks for scoring/timing system
- Anti-static flooring
- Condition space for added heat load

1 – One Electrical Room, approx. 426 sq. ft.

- Acrylic floor sealer on concrete

1 – One Below-Deck Pump Room / Mechanical Space, approx. 925 sq. ft.

- Direct access to exterior
- Acrylic floor sealer on concrete

1 – One Deck Level Mechanical Space, approx. 145 sq. ft.

- Direct access to exterior
- Acrylic floor sealer on concrete

Site Development

With a large student population, a wide variety of sports, and significant vehicular traffic, space is at a premium on the Greenwich High School campus. A multitude of active underground utilities serving the high school must be considered. The site also has significant environmental concerns related to polluted and contaminated fill placed during construction of the building between 1966 and 1972, and the related need to protect West Brothers Brook, which was relocated during construction of the high school but still runs through the site.

The design team worked closely with AECOM, who has been providing professional services in support of a years-long soil remediation program on campus, to determine the most suitable locations onsite for construction. The parking lot west of the existing facility has been remediated to a depth of several feet below the surface; a plastic warning layer was placed at this depth and the area capped with asphalt; this area also has a large new detention basin which was installed at significant cost. Most of the athletic fields were installed with similar remediation measures.

The recommended concept places a new natatorium facility over the footprint of the existing building, with expansion to the east, outside the primary historical fill area. Expansion to the west is minimal, reducing disturbance to monitored soils and to parking.

The portion of the site south of West Brothers Brook has been identified as an area with fewer environmental soil concerns relative to the rest of the site. One reason for this is that granite ledge, common in Greenwich, exists near and at grade in this area. While building on ledge is not ideal, it is preferable to managing unknown quantities of polluted and contaminated soil, especially if the design plans for the presence of ledge by limiting excavation. Maintaining the current tennis court locations helps limit excavation in areas with prevalent ledge to that required for the new Cardinal Access Driveway and related site improvements, including reconfigured parking and pedestrian walks, along with a new rain garden.

Site Program

See Site Plan for related requirements, proposed parking counts, tree removals and layout

8 – Eight Tennis Courts

- New post-tensioned concrete tennis courts with regulation post-mounted nets.
- Reconstruct existing retaining walls as required.
- Courts shall be fully covered with color-seal coat system and court lines for tennis only.

- Each grouping of tennis courts shall be enclosed with 10-foot-high fencing, coated wire mesh or similar.
- Each grouping of tennis courts shall include two sheltered benches (six total)
- Each grouping of tennis courts shall include one set of outdoor aluminum bleachers (three total) Bleachers shall be aligned along the long side of the courts, perpendicular to the net.

Cardinal Access Driveway

- As previously noted, the new “Cardinal Access Driveway” is intended to manage high-traffic events and to facilitate emergency access; access control may be implemented to prevent use as a shortcut through campus. The access driveway and associated vehicular bridge must be constructed to carry two lanes of traffic, and shall withstand the loads of emergency vehicles including fire department ladder trucks and other heavy rescue vehicles.

Other Site Elements

- Pedestrian pathways shall be maintained and reconfigured to provide connection to all new site elements.
- Rain Garden and other drainage management as required
- The overall design must minimize tree removal and maximize parking on site.

Sustainability

All State-funded schools with renovation budgets more than \$2 million dollars or new construction budgets more than \$5 million dollars must comply with Connecticut High Performance School Standards, a checklist-based system with mandatory and optional requirements, similar to LEED Silver. The project is NOT anticipated to receive State funding related to school construction because pools are not considered eligible for this type of grant. However, to be environmentally responsible, the project will generally adhere to these standards.

This process ensures that an integrated design process is followed from design through construction, including building commissioning of HVAC and key envelope components of the building. Many other sustainable practices are included and tracked, including minimum energy performance, energy modeling, air quality, ventilation, acoustics, recycled materials, limiting volatile organic compounds, green cleaning, and more. Long term sustainable energy must be considered in the design to lower annual operating costs and contribute to a cleaner environment.

See following pages for:

- Building Space Program & Overall Area Tally
- Conceptual Technical Specifications & MEP/FP Conceptual Narrative
- Conceptual Critical Path Schedule
- Conceptual Cost Estimates
- Background Information: TLBA Facility Assessment: March 3, 2025
- Drawings

BUILDING SPACE PROGRAM SUMMARY & OVERALL AREA TALLY

Greenwich High School Natatorium						
Core Aquatics		Option A Rebuild-in-Place		Existing		
Spaces	Proposed Quantity	Proposed Room Area (SF)	Proposed Area Subtotal (SF)	Existing Quantity	Existing Area (SF)	Notes:
Natatorium - Main Level Pool Deck		See below	-		See below	
Pool	1	9,000	9,000	1	4,768	
Dry Land Space	1		7,500	1	3,478	
Warm-up Pool / Hot Tub	1	Included	-	-		
Athlete Bleacher Seating	3	Variable	1,180	1	854	Existing does not separate athlete and spectator seating
Scorer Platform	1	200	200	1	58	
Scorer Office	1	200	200	-		
Coach / PE Offices	3	510	1,530	-		Each w/ single toilet/shower room
Meet Officials' Shared Office	1	420	420	-		Includes single restroom
Deck Equipment Storage	1	600	600	1	114	
Subtotal	13		20,630	5	9,272	
Public and Shared Space		Option A Rebuild-in-Place		Existing		
Spaces	Proposed Quantity	Proposed Room Area (SF)	Proposed Area Subtotal (SF)	Existing Quantity	Existing Area (SF)	Notes:
Entrance Vestibule	1	140	140	1	58	
Lobby	1	940	940	-		
Ticket Office	1	380	380	-		
Ticket Office Storage	1	320	320	-		
Alumni Room	1	1,300	1,300	-		Includes ADA Family Restroom
Mezzanine Level Spectator Seating	1	2,800	2,800	-		
Spectator Seating at Deck Level			-	See athlete seating		Portions of deck-level athlete seating may be used for smaller events
Subtotal	6		5,880	1	58	

BUILDING SPACE PROGRAM SUMMARY & OVERALL AREA TALLY

Greenwich High School Natatorium						
Locker Room Suite	Option A Rebuild-in-Place			Existing		
	Proposed Quantity	Proposed Room Area (SF)	Proposed Area Subtotal (SF)	Existing Quantity	Existing Area (SF)	Notes:
Coach / PE Offices	Existing to Remain: Not in project scope		-	Existing locker area is shared with non-aquatic sports; not easily quantifiable for Natatorium.		
Locker Rooms (Boys and Girls)			-			
Team Rooms (Boys and Girls)			-			
			-			
Subtotal	-		-	-	-	
Building Services and Core Area	Option A Rebuild-in-Place			Existing		
Spaces	Proposed Quantity	Proposed Room Area (SF)	Proposed Area Subtotal (SF)	Existing Quantity	Existing Area (SF)	Notes:
Men's Public Restroom	1	310	310	-		
Women's Public Restroom	1	310	310	-		
ADA/Family Toilet Rooms	2	65	130			
MDF (Data)	1	134	134	-		
Electrical	1	426	426	1	426	Removes pumps from existing electrical
Below-Deck Storage	-		-	1	154	Existing includes CW Piping
Below-Deck Pump / Mechanical	1	925	925	-		Existing Pump Room w/ Electrical
Deck Level Mechanical	1	145	145			
Subtotal	8		2,380	2	580	

BUILDING SPACE PROGRAM SUMMARY & OVERALL AREA TALLY

Greenwich High School Natatorium						
Circulation <i>Corridors, Stairs, Elevator & Interior Walls</i>		Option A Rebuild-in-Place		Existing		
Spaces	Proposed Quantity	Proposed Room Area (SF)	Proposed Area Subtotal (SF)	Existing Quantity	Existing Area (SF)	Notes:
Circulation (Corridors, Stairs, Elevator)		0.1260	4,416	-	-	
Interior Partitions & Chases		0.0500	1,753		302	
Subtotal			6,169	-	302	
Total Building Area		Option A Rebuild-in-Place		Existing		
Total Program Areas (NSF)		26,510			9,330	
Total Building Services & Core Area (NSF)		2,380			580	
Total Circulation (NSF)		6,169			302	
Grand Total (NSF)		35,059	Option A		10,212	Existing
OVERALL AREA - OPTION A						
Lower Level Pump Room, Net (NSF)	925					
Main Level, Net (NSF)	24,760	Includes existing pump room/electrical space				
Mezzanine Level, Net (NSF)	9,374					
Option 5 Total Net Area	35,059					
OVERALL AREA - EXISTING						
Main Level, Net (NSF)	10,212	Includes existing pump room/electrical space				
Main Level, Gross (GSF)	10,551					

ITEM		DESCRIPTION	OPTION	REMARKS
			A	
DIVISION I: GENERAL CONDITIONS				
I.1	Building Areas:	Existing Area to be Demolished, Net (NSF)	9,498	Demolished area not included in total.
		Existing Area Affected by Construction (to remain) Net (NSF)	426	
		New Area Below Deck for Pump Room, Net (NSF)	925	
		Natatorium Pool Deck Level: New Building Area, Net (NSF)	24,334	
		Natatorium - Mezzanine Level: New Building Area, Net (NSF)	9,374	
		Total Building Area, Net (NSF)	35,059	
		Existing Area to be Demolished, Gross (GSF)	11,220	Demolished area not included in total.
		Existing Area Affected by Construction (to remain) Gross (GSF)	426	
		New Area Below Deck for Pump Room, Gross (GSF)	1,127	
		Natatorium Pool Deck Level: New Building Area, Gross (GSF)	25,520	Gross areas do not include entrance canopies. Cost estimator may modify gross areas based on takeoffs.
		Natatorium - Mezzanine Level: New Building Area, Gross (GSF)	10,134	
		Total Building Area, Gross (GSF)	37,207	
I.2	Zoning	Zone RA-I with R-20 at the south end of the site. - Maximum FAR in RA-I: 0.135 - Maximum FAR in R-20: 0.225 Per 2019 MP: 455,000 gsf on 54.5 acres (2,352,240 sf) => Approximate FAR of 0.1934. Maximum area allowed on site is 317,552 sf, so existing condition is ~137,448 sf over. - Any additional area on any floor will therefore require a variance.	YES	
I.3	Sustainability	Connecticut High Performance Building Standards will be followed.	YES	

ITEM			OPTION	REMARKS
DESCRIPTION			A	
1.4	Security	The project will be coordinated with District leadership security goals. The school must also comply with school safety infrastructure criteria as determined by the Connecticut School Building Projects Advisory Council. Per Connecticut General Statutes: § 10-292r. School safety infrastructure criteria. (a) <i>The School Building Projects Advisory Council, established pursuant to section 10-292q, shall periodically review and update, as necessary, school safety infrastructure criteria for school building projects awarded grants pursuant to this chapter and the school security infrastructure competitive grant program, pursuant to section 84 of public act 13-3*. <u>Such school safety infrastructure criteria shall conform to industry standards for school building safety infrastructure and shall address areas including, but not be limited to, (1) entryways to school buildings and classrooms, such as, reinforcement of entryways, ballistic glass, solid core doors, double door access, computer-controlled electronic locks, remote locks on all entrance and exits and buzzer systems, (2) the use of cameras throughout the school building and at all entrances and exits, including the use of closed-circuit television monitoring, (3) penetration resistant vestibules, and (4) other security infrastructure improvements and devices as they become industry standards.</u></i>	YES	
1.5	Acoustics	Per Connecticut State Building Code, for new construction the building must comply with ANSI A117.1 Section 808, "Enhanced Acoustics for Classrooms." Reverberation time will be limited in accordance with this standard, and wall partitions shall have STC ratings as needed to keep classroom ambient sound levels from sources outside the classroom to 35 dBA and 55 dBC. All wall partitions separating spaces shall extend to the deck above. All spaces are considered to have acoustic separation. Acoustical finishes and treatments will be used as needed throughout the interior.	YES	
DIVISION 2: EXISTING ENVIRONMENTAL & DEMOLITION				
2.1	Environmental: Soils and Hazardous Materials Abatement	Soils: The site is has been under CT DEEP Voluntary Remediation over the last 5+ years due to contaminated and polluted fill potentially leaching into a stream onsite and into groundwater between 3-10 feet below grade. The area immediately west of the existing pool was remediated to a depth of 2 feet and capped with a marker layer; the parking area beyond contains a deeper drainage structure, recently installed. The courtyard east of the pool facility does not appear to be an area of fill.	YES	
		Hazardous material investigation of the existing pool facility, constructed in 1970, is outside the scope of this study. It is assumed that hazardous materials such as encapsulated asbestos exist within the 1970s era construction. An allowance should be carried for hazardous materials abatement.	YES	
2.2	Building Demolition	Complete removal of existing pool facility with enabling to maintain functionality of existing utilities serving the larger high school, including but not limited to existing chiller lines running through pool facility to HVAC plant, electrical feeder panels, etc.	YES	
2.3	Selective Demolition & Renovated Spaces	Provide for selective demolition at interface of existing pool facility as required to maintain functionality of existing high school and locker room spaces immediately adjacent to existing pool facility.	YES	

ITEM		DESCRIPTION	OPTION A	REMARKS
DIVISION 3: CONCRETE				
3.1	Soils	Geotechnical investigation is outside the scope of this study. For the purposes of this narrative, a preliminary soil bearing capacity of 3 ksf has been assumed. Consider potential for encountering ledge.	YES	
		Option 5 is located in an area where ledge (granite) is known to be close to or at grade. The design accounts for this by raising the pool deck to minimize excavation. Foundations may be pinned to ledge pending analysis of ledge stability.	N/A	
3.2	Foundations	New foundations consist of 16" thick reinforced concrete walls with 8" brick shelves below masonry walls. Apply 2" rigid foundation insulation at perimeter, 2'-0" horizontally & vertically. Foundation walls sit on continuous 3'-0" wide x 1'-0" thick spread wall footings. Use 4,500 psi concrete for foundation walls and footings. Place footings exposed to frost 3'-6" minimum below grade. Assumed wall reinforcing is #5@16"o.c. vertical with matching footing dowels and #4@12"o.c. horizontal with (2)-#5 continuous horizontal bars top and bottom. Longitudinal footing reinforcing shall be (3)-#5 continuous. All wall reinforcing shall have Class "B" laps at splices and corner bars. New exterior columns will be supported on reinforced concrete piers supported on reinforced concrete spread footings. Interior columns will be supported on isolated reinforced concrete piers and isolated reinforced concrete spread footings.	YES	
		Dewatering likely to be required.	For pool and elevator pits	
3.3	Slabs-on-grade	Interior slabs-on-grade at additions consist of 5-inch-thick normal weight concrete with topically applied penetrating colloidal silica concrete treatment, reinforced with WWF 6x6-W2.9xW2.6 supported on continuous steel wire chairs. Set over 20 mil Class A vapor barrier over compacted processed aggregate. Sawcut control joints each direction at approximately 20 feet.	YES	
		Provide new 4-foot square radon collection pits below new concrete slabs. Provide quantity as noted for each option.	ONE	
3.4	Elevated composite slabs on deck	Assume 3.25" lightweight concrete floor slab (3,500 psi) on a 2 inch, 20 gage galvanized composite metal floor deck (total slab depth = 5.25") reinforced with 6x6-W2.9xW2x.9 welded wire fabric supported on continuous steel wire chairs. The concrete for the supported slabs shall also have a moisture vapor reducing admixture.	YES	Consider use of normal-weight concrete (possibly at greater thickness or psi) depending on lightweight concrete cost and availability.
DIVISION 4: MASONRY				
4.1	CMU	New interior walls shall be 8-inch CMU, painted.	YES	
		Exterior backup walls shall be 8-inch reinforced CMU.	YES	
4.2	Brick veneer cavity wall systems	Refer to Division 7 for general approach to existing exterior walls based on year constructed. Approximately 50% of exterior wall cladding at new exterior walls will consist of: Brick veneer w/ lateral reinforcing at 16-inches, horizontally & vertically; air space; 3-inch rigid cavity insulation; fluid-applied air infiltration barrier applied to backup wall construction. Refer to Division 7 for insulated metal cladding assembly at the other 50%.	YES	

ITEM		DESCRIPTION	OPTION A	REMARKS
DIVISION 5: METALS				
5.1	Structural Steel	Structural steel frame and bracing at new construction: Assume structure tonnage of 11 lbs/square foot. Lateral loads to be addressed via concentric steel braced frames and intermediate reinforced masonry shear walls. See Division 3 for supported floor slabs.	YES	
5.2	Metal Deck	Typical roof decks at new construction: 20 gage, 1.5 inch galvanized metal roof deck. Provide acoustical deck at Gymnasium spaces. Refer to Division 3 for elevated composite slabs on deck. Roof decks at new construction will pitch at 1/4-inch per foot where feasible for roof slopes.	YES	
5.3	Loose Lintels	Galvanized steel lintels shall be provided at new exterior wall openings.	YES	
5.4	Metal Pan Stairs, Railings and Guards	New interior stairways shall consist of miscellaneous steel channels, angles and tubular steel 2-inch concrete filled metal pans and risers; 1-1/2-inch square posts/top & bottom rails; 3/4-inch square pickets or 1-inch heavy-gauge steel mesh; 1-1/2-inch round steel handrails, both sides. Paint exposed steel.	YES	
		Provide painted railings for all ramps.	N/A	
		Provide color-galvanized railing systems for exterior ramps and stairs.	YES	
DIVISION 6: WOOD & PLASTIC				
6.1	Rough Carpentry	Rooftop equipment bases and support curbs; pressure-treated and fire-retardant.	YES	
		Wood blocking, cants and nailers. Pressure-treated and fire-retardant when used outside building envelope.	YES	
		Plywood backing panels for electrical.	YES	
6.2	Interior Millwork	Provide custom casework at Front Lobby and Alumni Room. Consider solid surfacing countertops, caps and accents. Consider wood veneer casework.	YES	
6.3	Window Sills	Provide solid surfacing sill and apron at all window openings.	YES	
DIVISION 7: BUILDING ENVELOPE				

ITEM			OPTION	REMARKS
DESCRIPTION			A	
7.1	Exterior Walls: New Construction	New construction: Backup shall be 6" CFMF with 5/8" exterior gypsum sheathing. Provide 4 inches closed-cell sprayfoam inside cavity. Note 8" CMU backup locations defined in Division 4. Fluid-applied air and vapor barrier to be applied to outside face of sheathing or CMU, followed by 3 inches of rigid insulation. 50% of wall area shall be faced with brick veneer over air space as described in Division 4. Provide metal assembly at remaining 50%: Consider Kingspan insulated metal panels or similar, QuadCore KS Series Profile, smooth, non-embossed finish, 3 inches thick. Assume parapets at typical construction. For overhangs and parapets above curtainwall, consider insulated metal panel soffits and fascia, Kingspan or similar, QuadCore KS Series Profile, smooth, non-embossed finish, 3 inches thick. Window openings are shown diagrammatically on most plans; assume 6-ft square punched window openings, typical. Consider curtainwall at major spaces such as the front entrance, media center, and cafeteria. Together, window openings comprise around 15% of new construction wall areas.	YES	
7.2	Waterproofing	Provide blind-side and post-applied sheet waterproofing system at elevator pit and below deep pool foundations.	YES	
7.3	Metal Equipment Screens	Provide perforated metal-panel roof screens on galvanized steel posts at 2 to 3 sides of all major rooftop equipment locations. Consider Epic Metals Corporation, EST Profile, pre-finished ribbed and perforated system.	YES	
7.4	Roof Systems	All roofing assemblies shall be new. Assemblies at existing construction shall be removed down to deck. New assembly shall consist of 1/2-inch substrate board, minimum 6-inches of polyisocyanurate insulation with tapered insulation as needed to obtain roof slopes of at least 1/4-inch per foot, 1/2" cover board, and fully adhered, 60-mil black EPDM. Provide flashings as required. Provide fascia/coping compatible with insulated metal panel soffits/parapets.	YES	
7.5	Spray Fireproofing	Spray fireproofing of structure to achieve 2-hour fire rating	YES	
DIVISION 8: OPENINGS				
8.1	General	Refer to Division 7 Exterior Wall descriptions for window areas expressed as a percentage of the wall.	YES	
		Exterior doors from classrooms will be eliminated and replaced with new window assemblies.	YES	
		Windows within 8 ft of ground shall be entry resistant (School Guard Glass SG4 or equivalent).	YES	
8.2	Exterior Punched Openings	6 ft x 6 ft - Fixed, thermally broken aluminum frame storefront assemblies with 1-inch insulating glass, Solarban 70. EFCO Corporation 2" x 4-1/2" Series 403 T, Thermal Storefront Framing system.	YES	Minimal; most openings will be larger.

ITEM			OPTION	REMARKS
			A	
8.3	Exterior Storefront and Entrances	Thermally broken aluminum storefront with 1" security glazing - EFCO Corporation 2" x 6 1/2" Series 406 T, Thermal Storefront Framing system. Bottom 6 ft of glazing at entry vestibule shall be break resistant (School Guard Glass SG5 or equivalent) at interior and exterior portions of vestibule.	YES	
8.4	Clerestory	Provide clerestory at north end of pool facility, Kalwall or equal.	YES	
8.5	Exterior Doors (FRP)	FRP doors in aluminum frames, typical at all exterior doors except main entrance vestibules and CW or storefront assemblies.	YES	
8.6	Overhead	Provide 12 ft. x 10 ft. insulated metal coiling overhead door with manual chain and motorized operation at Pump Room.	YES	
8.7	Interior Storefront	Consider at Main Office, Gym Offices, and within Media Center: EFCO Corporation 1-3/4" x 4-1/2" Series 402 NT, Non-Thermal Storefront Framing system, tempered glass (SG4 at Main Office and Front Vestibule). Consider sidelites and flush wood doors.	YES	
8.8	Interior Doors and Frames	Flush wood door in HM frame with 3" x 33" sidelite and "Shelter Shutter" (consider at \$70 each). Provide 1-hour rated doors at Stairways.	YES	
8.9	Hardware	Provide card readers at entrances, elevator, corridor access, and other major spaces. Mortise locks typical at locker rooms and smaller-sized rooms. Panic devices typical for all larger spaces, corridors, and corridor/stair exits.	YES	
DIVISION 9: FINISHES				
9.1	Non-structural framing and drywall	Framed drywall (5/8" Type X moisture/mold resistant, and as noted) is minimal. Use abuse-resistant drywall in exposed areas within 8 feet of finished floor. (IF USED) Partitions separating spaces shall typically be 3 5/8" metal stud with acoustic batt insulation, extending to deck with penetrations acoustically sealed, and shall have (2) layers of drywall on one side and (1) layer on the other for acoustics. Toilet room wet walls will receive floor-to-ceiling ceramic tile; use tile backer.	YES	Public toilet room wet walls for tile only. Assume all block construction elsewhere (confirm at office demising walls).
9.2	Ceilings	Typical ceiling system at offices and smaller spaces: 2'-0" x 2'-0", Armstrong Ultima Health Zone, 15/16" grid.	YES	
		Exposed ceilings, painted acoustical deck, throughout main space.	YES	
9.3	Flooring	Lobby & Public Restrooms: Large format (12" x 24") porcelain tile. Also allow for tile at wet walls.	YES	
		Flooring at Pool Deck and at Offices at Deck Level: 2 x 2 ceramic mosaic tile on thick mortar Bed with waterproofing membrane.	YES	
		Typical flooring at Alumni Room: Luxury vinyl tile, Tarkett or similar, multiple colors/patterns. 4" rubber base.	YES	
		Stairways: Rubber treads with contrasting nosing strips; Toli Takiron Pathways slip-resistant flooring at landings.	YES	
		Back-of-House: Everclear by Euclid Chemical acrylic cure & seal with one packet of pigment per bucket.	YES	
9.4	Acoustic Panels	Provide perforated metal acoustical panels, equivalent to Gordon "Alpro Acoustical Systems." Horizontal Al-Panel at deck/spectator seating, and corrugated C panels over pool.	YES	
9.5	Painting	Paint all exposed drywall, exposed ceilings, structure, etc. Assume epoxy paint throughout.	YES	

ITEM		DESCRIPTION	OPTION	REMARKS
			A	
DIVISION 10: SPECIALTIES				
10.1	Visual Display Surfaces	Offices: (1) 4'h x 6'l marker boards in anodized frames with tray; (1) 4'h x 6'l tack boards with color impregnated cork and anodized aluminum frame. Alumni Room to receive (2) of each.	YES	
		Consider (2) recessed display cases in lobby: 390 Series Large Door Display Cases by Claridge.	YES	
10.2	Signage	Assume typical panel signage throughout. Provide for dimensional character signage: 12" stainless steel CARDINALS NATATORIUM identification at one exterior location.	YES	
10.3	Toilet Partitions & Accessories	At all multi-stall toilet rooms, shower rooms: Graffiti resistant HDPE toilet partitions, floor mounted, overhead braced. Grab bars for ADA toilet. Mirrors, TP Dispensers, Soap Dispensers.	YES	
		At single toilet rooms: Grab bars for ADA toilet. Mirror, TP Dispenser, Soap Dispenser.	YES	
DIVISION 11: EQUIPMENT				
11.1	Appliances	Provide refrigerator (bottom freezer type) and microwave at Alumni Room.	YES	
11.2	Pool Competition and Safety Equipment	Natatorium Scoreboard: Consider Omega Timing and Scoring System; for multiple aquatic activity scoring.	YES	
		Competition Diving Blocks/Deck/Diving Equipment	YES	
DIVISION 12: FURNISHINGS (FIXED)				
12.1	Casework	Plastic laminate casework with solid surfacing tops shall be provided along one full wall a	YES	
12.3	Entrance Flooring Systems	1/4" surface-mounted foot grilles with no recess required: Floorformations by Construction Specialties. Provide at all entrance vestibules, at stairways near door to exterior, and at other major points of entry.	YES	
12.4	Fixed Spectator Seating	At upper-level mezzanine. Bleacher seating, plastic seats, no backrests.	YES	
12.5	Telescoping Stands	At pool deck level. Consider manual telescoping seating, MAXAM by Hussey, plastic seats (no backrests) with logo applied to provide visual when stands are closed.	YES	
DIVISION 13: SPECIAL CONSTRUCTION				
13.1	New Swimming Pool	Short-Course Stretch Pool, 75 feet x 116 feet, with 4-ft shallow end, 2-meter minimum depth across enough of the pool to allow for regulation water polo; deep end with 2 diving boards; moveable bulkhead; markers for 25M lap swimming. Myrtha Pool Shell, Gutter, Bulkhead and Recirculation, Filtration and Chemical Control systems.	YES	
DIVISION 14: ELEVATOR				
14.1	New Elevator	Provide new 3500 lb. capacity MRL electric traction elevator, stretcher-compliant, serving levels indicated.	YES (ONE)	

ITEM			DESCRIPTION	OPTION	REMARKS
				A	
DIVISION 21: FIRE PROTECTION (SPRINKLERS) - REFER TO CES NARRATIVE					
DIVISION 22: PLUMBING - REFER TO CES NARRATIVE					
DIVISION 23: HVAC - REFER TO CES NARRATIVE					
DIVISION 26: ELECTRICAL - REFER TO CES NARRATIVE					
DIVISION 27: COMMUNICATIONS - REFER TO CES NARRATIVE					
DIVISION 28: ELECTRONIC SAFETY & SECURITY - REFER TO CES NARRATIVE					
DIVISIONS 31-33: SITE					
31.1	Earthwork, General	Phase I Environmental is outside the scope of this Study. Incorporate a robust rock removal allowance. COORDINATE W AECOM		YES	
31.2	Grading	Grading will be required for all options. Assume grading for ADA compliance.		YES	
32.1	Paving in Existing Areas	Existing bituminous paving areas within the work area shall be re-paved unless noted otherwise. Additionally, new paving shall be provided where paving is impacted by grading or trenching.		YES	
32.2	Sidewalks	Assume new concrete sidewalks within 50 feet of new facility and as shown.		YES	
32.3	Paving, General	Paving, general: Provide new 4" bituminous paving on 10" stone at access roads. Provide 3" bituminous paving on 8' stone at parking areas with no bus or truck traffic. Provide precast curbs at parking areas and associated driveways.		YES	
32.4	Site Lighting	Provide new, full-cutoff site lighting throughout the parking lots and along pedestrian ways around and into the buildings.		YES	
32.5	Site Furnishings	Provide allowance for site furnishings, including new benches, waste receptacles and bicycle racks at multiple points around facility and site amenities.		YES	
32.6	Landscaping	Provide landscape enhancements throughout site. An allowance should be provided for accent planting around the building and school campus.		YES	
32.7	Utilities and associated trenching/restoration	Trenching and restoration will be required to bring utilities to the building, and/or to modify existing utility pathways near existing pool facility.		YES	
32.8	Drainage	Stormwater drainage to be maintained and provided as needed to support new facility.		YES	
33.1	Sanitary Sewer	Sanitary sewer main for high school runs below pedestrian bridge and through existing tennis courts. Sewer line to be maintained active.		YES	
33.2	Chilled Water	Existing pool accepts heat rejected by new chilled water system for high school; provide utility connection to accommodate heat rejection at new pool.		YES	

Mechanical/Electrical/Plumbing/Fire Protection



PROVIDED TO FACILITATE CONCEPTUAL COST ESTIMATE. COORDINATE W/ OWNER DESIGN REQUIREMENTS FOR MANUFACTURERS, ETC., AS PROJECT ADVANCES.

OVERVIEW:

The following narrative describes the existing conditions and the proposed new mechanical, electrical, plumbing and fire protection systems to serve the renovated areas of the Greenwich High School Pool Renovation Project in Greenwich, Connecticut.

EXISTING PLUMBING SYSTEMS:

- Existing plumbing piping serving existing pool equipment shall be removed with demolition of existing pool equipment. Pool equipment removal shall include but not limited to the following equipment:
 - Sand filters
 - Circulation pumps
 - Backwash tank
 - Pool heater (refer to mechanical narrative section)
 - Surge tank piping

NEW PLUMBING SYSTEMS:

- Furnish and install new plumbing piping (cold water, hot water, waste & vent) for new pool equipment layout (refer to architectural narrative for pool equipment). New piping system shall be tied into existing system per contract documents.
- Provide new plumbing piping (cold water, hot water, waste & vent) for the additional toilet rooms located at the end of the pool near the storage and ticket room and toilet rooms located between office spaces.
- Remove and replace existing deck drains and add additional if required.

Coordinate to accept heat rejection from the high school's new chilled water plant.

EXISTING FIRE PROTECTION:

- The existing pool area is protected by the sprinkler system with the sprinkler heads located above the spectator seating area and swimming pool area. The fire protection service is original to the building and is assumed to be operating as designed.

NEW FIRE PROTECTION

- Provide new sprinkler heads (1:1) replacement in accordance with NFPA 13.
- Provide new sprinkler heads to serve expanded renovated spaces including, toilet rooms, storage areas, ticket room, vestibule and offices spaces.

- Sprinklers shall be concealed, fully recessed in finished areas with ceilings.
- Quick response sprinkler heads shall be used in light hazard locations. Sprinklers, unless noted otherwise, shall have a ½" orifice and a 165°F temperature rating.
- Piping for the sprinkler system within the fan room shall be steel pipe, ASTM A 53; Schedule 40 seamless carbon steel. Schedule 10 pipe shall be allowed for pipe sizes larger than 2" diameter when roll grooved mechanical couplings are used. Sprinkler piping shall be installed above ceilings and concealed within chases where applicable.
- Piping installed within the pool area filter rooms and tunnels shall be ASTM A 53; Schedule 40 seamless carbon steel and galvanized. Sprinklers installed in these spaces shall be corrosion resistant with nickel/Teflon coating.
- Fittings shall be grooved mechanical fittings: ANSI A21.10 ductile iron; ASTM A47 grade malleable iron. Couplings shall be ASTM A 536 ductile iron or malleable iron housing, EPDM gasket with nuts, bolts, locking pin, locking toggle or lugs to secure roll grooved pipe and fittings.

EXISTING MECHANICAL SYSTEMS:

- The existing hot water pump, heat exchanger and all piping and accessories to be removed. Existing hot water supply and return mains shall be cut and capped in penthouse space to be used for new units.
- The two indoor air handling units in the penthouse shall be removed with associated roof mounted dry coolers on roof.

New Mechanical Systems – Scope of Work

- Furnish and install (2) roof mounted, outdoor air handling units (AU-1 & AU-2) to serve the new pool area. Both units will be mounted on the roof, adjacent from the existing mechanical penthouse. The air handling units will have the following design requirements:
 - Outdoor pool dehumidification unit
 - 20,000 CFM each
 - 70 tons nominal capacity each
 - Variable speed supply, exhaust, and purge air fans
 - Duct mounted hot water coil
 - Hot gas reheat coil
 - Air cooled DX
 - OA heat recovery package (glycol run around coil)

- Pool water heater
- Dectron LD Series or approved equal.
- Furnish and install new heat exchanger and new base mounted hot water pump in existing penthouse. Existing hot water and return water supply mains to serve new heat exchanger. Pump to serve AHU-1 & AHU-2 hot water coils in units. Provide glycol 50 gallon fill and pump system components.
- Furnish and install new horizontal air handling unit. The unit will be located in the pool equipment room and shall be ~~Aeon H3 or CF~~ series or approved equal. The air handling unit will have the following design requirements:
 - Variable speed supply and exhaust fans
 - DX heat pump coil
 - 4 ton nominal condensing unit
 - Energy recovery wheel
 - 1,200 CFM
- Furnish and install new roof mounted air handling unit. The unit will be located on the roof and serve new bathroom, offices and storage rooms. Unit shall be ~~Aeon RN~~ series or approved equal. The air handling unit will have the following design requirements:
 - Variable speed supply and exhaust fans
 - DX heat pump coil
 - Hot water heating coil
 - 10 ton nominal condensing unit
 - Energy recovery wheel
 - 4,000 CFM
- Provide new packaged controls for air handling units. Thermostats to be located in space. Provide Bacnet integration into existing BMS system.

PROVIDE UNITS BY DISTRICT-APPROVED MANUFACTURER

EXISTING ELECTRICAL SYSTEMS:

- **Main Electrical Distribution and Standby Power**
 - Electric service for the building is fed through two (2) 480/277 volt, 3 phase, 4 wire services located at the North and South ends of the building. The south service switch is rated for 1600 amperes and feeds the Natatorium area of the building. Only the southern equipment yard will be impacted by the new project. The switchboard is Eaton Cutler Hammer featuring an exterior pad mounted service switch and utility metering compartment. The equipment is pad mounted at the southern exterior equipment yard co-located with the service transformer, generator, and miscellaneous

distribution equipment. The equipment appears to be in serviceable condition and unless is from a building renovation/installation that dates to approximately 1985. This equipment is in serviceable condition and should be suitable to remain in service pending internal inspection by a third party review company, such as SNEET or Phasor Engineering.

- Existing power distribution equipment within the pool equipment room consist of two (2) 480/277v-3ph-4w-800 ampere fusible distribution panels. This equipment is extremely old and beyond useful life. It is recommended that new distribution panels be installed to suit the new equipment loads required for the Natatorium renovation.
- Most of the electrical distribution equipment observed during the walk through is comprised of panels and raceways original to the building. These panels are aged and show signs of deterioration. Obtaining replacement parts for these legacy panels is most likely relegated to third party resellers of used equipment. Existing legacy electrical panels located within the renovated spaces will be replaced during the renovation.
- The southern equipment yard near the Natatorium contains a 400 kW / 500 kVA standby generator. The unit is a Detroit Diesel Spectrum Series diesel fired unit with no sub-base tank. Fuel is pumped to the unit from an underground bulk storage tank.
- ATS equipment rated for 150 amperes at 208 volt is integrated into the Natatorium equipment area that is fed through a stepdown transformer to provide 208/120v power to selected loads.
- A remote ATS supplies power to 480/277V emergency panels EM-F, EM-G, EM-H, EM-J that are located within the Natatorium block of equipment.
- **Electrical and Fire Alarm Devices**
 - The building is equipped with a Fire Alarm Panel manufactured by Notifier. The coverage of fire alarm initiation and notification devices appear to be code compliant. Voice evac appears to be implemented within the existing Natatorium system. This system should be suitable for reuse in the renovated area.
- **Data Network / Communication System**
 - The building is equipped with data network service with nearby IDF infrastructure to support school operations.
 - Coverage of these systems seems to be appropriate, however it is anticipated that new wiring and devices will be required throughout the renovated spaces.
- **Interior Lighting**
 - Interior lighting within the pool area is satisfactory for general use or training but lighting levels are not consistent with modern competitive pool facilities that require 100 footcandles of illumination.

- The ability to manipulate multiple lighting levels would be optimal to suit a modern operational environment. 100 footcandles would be provided for competitive events, 50 footcandles would be provided for recreational use.
- It is recommended that all renovated spaces existing lighting systems will be replaced with new systems meeting IES recommended lighting levels and controls that will be in compliance with energy codes to promote obtaining rebate incentives from the utility company.
- **Emergency Lighting and Exit Signs**
 - Code-required emergency lighting is accomplished by the use of generator powered fixtures. Coverage of existing fixtures could not be ascertained but proper manipulation of the new lighting layout to provide life safety lighting with minimum illumination levels (1.0 FC average) throughout the egress paths is readily accomplished through a proper new design. The condition of the actual life safety transfer equipment will need to be addressed in future surveys to identify adequacy for permanent use.
 - Code-required exit sign coverage appears to be appropriate. Condition of the signage appears acceptable. Signs will need to be updated to reflect the Connecticut approved Symbol of Accessibility, where applicable.
- **Electrical demolition to include:**
 - Air Handling Units located in equipment penthouses shall be removed. Circuits supporting SF and RF, motor controls, duct smoke detectors, shall be removed. Associated roof mounted drycoolers shall be removed. All electrical infrastructure supporting the two air handlers and rooftop equipment shall be removed back to the source.
 - Pool Equipment – all conduit, wiring, disconnect switches, generic electrical controls, etc.
 - Lighting Fixtures – Natatorium high bay lighting, recessed downlights, exit signage, recessed and surface mounted 1x4, 2x4, 2x2 lighting.
 - The distribution system shall be modified to replace and upgrade the three (3) existing fusible switch type panelboards (MDP-G Section 1 and Section 2 800 ampere each and PP-G 125 ampere) and circuit breaker type branch circuit panelboards EM-G (1998), EM-F, RP-1G, located within the Natatorium equipment area that will support the new HVAC and Pool equipment. All existing feeders and branch circuits shall be preserved for reconnection to the replacement panelboards.
 - Existing pool equipment circuits shall be replaced and provided new to new panelboards.

NEW ELECTRICAL SYSTEMS

- **Applicable Codes and Standards**

- The electrical systems will be designed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.
 - 2022 Connecticut State Building Code, including adopted supplements and amendments.
 - 2022 Connecticut State Fire Safety Code, including adopted supplements and amendments.
 - 2021 International Building Code.
 - 2021 International Energy Conservation Code.
 - 2020 NFPA 70, National Electrical Code
 - Illuminating Engineering Society Lighting Handbook (IESNA), 10th Edition.
 - NFPA, Latest Versions.
 - ASHRAE 90.1.
- **Electrical Service**
 - The existing 480/277 volt exterior service switchboard and electric service will remain and will not need to be upgraded or replaced as part of the project. The breadth and depth of the project scope is not impactful enough to warrant replacement or upgrading. CES recommends a full preventative maintenance evaluation with video thermographic scan under load to be performed on the equipment with recommendations to the owner.
 - Existing panelboards outside of the renovated spaces shall remain.
- **Electrical Distribution**
 - New and replacement distribution panelboards shall be provided as follows:
 - Two Area G distribution panels to replace MDP-G Section 1 and MDP-G Section 2. The panels shall be 480Y/277V, 3PH, 4W, 54-pole 800 ampere main circuit breaker in each and with the following branches:
 1. MDP-G Section1:
 1. (2) 30A-3p
 2. (2) 100A-3p
 3. (2) 200A-3p
 4. (2) 400A-3p
 2. MDP-G Section 2:

1. (4) 60A-3p
 2. (5) 100A-3p
 3. (1) 200A-3p
- One Area G distribution panel to replace PP-G. The panel shall be 480Y/277V, 3PH, 4W, 42-pole 125 ampere main circuit breaker with the following branches:
 1. (6) 30A-3p
 2. (6) 60A-3p
 - The Mechanical Equipment Mezzanine shall contain:
 - One Mechanical Equipment Mezzanine panel: MP1 - 480Y/277V, 3PH, 4W, 400 ampere, main circuit breaker type, 42 pole each. This panel shall be provided with a new 400 ampere feeder approximate length 150 feet to reach the new 800 ampere distribution panel MDP-G Section 1. This panel shall be fed with two sets of 2" conduit, 4#3/0 & #6 ground fed from a new 400 ampere branch CB. The approximate feeder length required will be 200 feet
 - One General Purpose Panel 208Y/120V, 3PH, 4W, 42-pole, 200 amp main circuit breaker type fed from one 75 KVA 480V delta primary/208Y-120V secondary transformer to be located within the Pool Equipment room. This transformer and panel shall be fed from the new MDP-G Section 1.
 - **Branch Circuits**
 - In general use areas (with the exception of the pool equipment room) branch circuits shall be installed in EMT conduit. Type MC cable shall be limited to concealed spaces above finished ceilings in rooms or drywall type partitions after first device. EMT conduit shall be used to the first device in a branch circuit and shall be used in all masonry or CMU partitions.
 - GFI and weatherproof convenience receptacles located around the pool area, located 30-feet on center.
 - (3) Duplex receptacles and (1) quadruplex receptacle per office, (1) circuit per office.
 - (1) Duplex receptacle mounted above sink in each toilet room.
 - Circuits for all HVAC equipment as required. 120V Wiring to control panels, control transformers, etc shall be provided by the electrician while low voltage control wire shall be included in Mechanical contractor.
 - Circuits for all pool and plumbing equipment.

- Circuits for the Fire Alarm Equipment and Sound Equipment as required.
- Circuits for office equipment as required.
- Circuits for hand dryers in locker rooms.
- Maintenance GFCI and weatherproof receptacles located on the roof within 25ft of HVAC rooftop equipment.
- Exterior GFI and weatherproof wall mounted receptacles where directed by the owner.
- Branch circuits for pool equipment within the pool equipment room shall be installed using schedule 40 PVC conduit and fittings. All junction and device boxes shall be non-metallic or cast aluminum boxes.
- Furnish and install branch circuits for the following mechanical equipment:
 - (2) outdoor roof mounted air handling units (AU-1 & AU-2) to serve the new pool area. For AU-1 provide 1" conduit with 3#2, 1#6 ground, to 100 ampere 3 pole CB in new panel, approximately 50' to the new panel in Mezzanine. For AU-2 provide 1" conduit with 3#2, 1#6 ground, to 100 ampere 3 pole CB in new panel, approximately 150' to the new Mezzanine electric panel MP-1.
 - Furnish and install branch circuits for a new 4 ton air handling unit. Provide (2) 1" conduits with 3#10 & #10 ground each to a new 30 ampere 3 pole circuit breaker in the new Pool Equipment Room electric panel PP-G. Approximate length, 100 feet.
 - Furnish and install a branch circuit for a new roof mounted Aeon AR type 10 ton air handling unit. Provide (1) 1" conduit with 3#6 & #10 ground to a new 60 ampere 3 pole circuit breaker in the new Mezzanine electric panel MP-1. Approximate length, 100 feet.
 - Furnish and install a branch circuit for a new support pump. Provide (1) 1" conduit with 3#10 & #10 ground to a new 30 ampere 3 pole circuit breaker in the new Mezzanine electric panel MP-1. Approximate length, 100 feet.
- **Equipotential Bonding System**
 - Provide an equipotential bonding system in the new pool area per the requirements of the NEC. Grounding system shall include a grounding grid at the pool deck and bonding of all metallic structural components and metallic pool fittings attached to the pool structure (ladders, starting stations, sports equipment, etc). The bonding shall encompass the new stainless steel pool liner proposed for the upgrade of the pool shell.
- **Fire Alarm System**

- The existing Notifier addressable fire alarm system shall be maintained operational to serve the renovated and new spaces. At minimum in renovated spaces, the system shall include the following equipment:
 - New Voice Capable Speaker/strobe devices within the Pool/Natatorium Area. Approximately (12) new combination speaker / strobe devices shall be required within the Pool and Mezzanine viewing areas. All head end amplification for voice functionality shall be added to the existing system; i.e. amplifiers, speaker/strobe annunciating devices, Emergency handsets. The head end Fire Alarm system panel shall be modified to suit NFPA required features to achieve operational status.
 - One Area of Assembly communication handset shall be provided for the Pool Area.
 - Smoke detection in storage areas or areas that are infrequently used. Heat detection will be provided where the application of smoke detectors would be problematic and promote false alarms. A minimum of (12) new smoke detectors shall be provided.
 - Manual pull stations at ends of corridors (within 5 ft. of the exit doors), egress doors, and no further apart than 200 feet. A minimum of (4) pull-stations shall be provided.
 - (2) Duct smoke detectors for each air-handling unit, (1) in the supply, and (1) in the return duct. Additional detectors may be required subject to final branch duct distribution.
 - Signal to BMS system for fan shut-down, and damper actuation on alarm condition.
 - All fire alarm system wiring will be fire alarm MC cable. EMT conduit with type THHN wire shall be provided where exposed.
 - The existing fire alarm system remote communicator shall remain.
- **Exit and Emergency Lighting**
 - Emergency lighting shall be accomplished in renovated and new spaces using selected standard lighting fixtures connected to emergency power and controlled with UL-924 shunt relays. Emergency lighting shall be provided in all egress paths, areas of assembly and other areas where required by code.
 - Exit signs will be self-contained, universal mounted, LED illuminated, low energy usage fixture.
 - Exit signs including the international symbol of accessibility will be provided at level of exit discharge doors in the renovated and new spaces.

- **Lighting Systems**

- Typical illumination levels in the renovated and new spaces include:
 - Corridors, toilet rooms, storage rooms and stairways - 15fc.
 - Offices and utility rooms – 30fc.
 - Pool Area - 100fc for competitive events; 50 fc for recreational swimming.
 - Pool Area Viewing Mezzanine – 30fc.
 - Locker Rooms – 30fc.
- The following fixtures will be provided new and renovated spaces:
 - Direct/indirect 2' x 2' recessed mounted LED fixtures in office/work areas, and other select locations.
 - 2' x 2' recessed LED fixtures in corridors.
 - Pendant linear direct/indirect LED fixtures in locker rooms.
 - Industrial style linear strip type LED fixtures in mechanical spaces.
 - Gasketed non-metallic linear strip LED “Vaporlume” style fixtures with gasketed acrylic lenses in pool equipment rooms.

- **Specialty Interior Lighting**

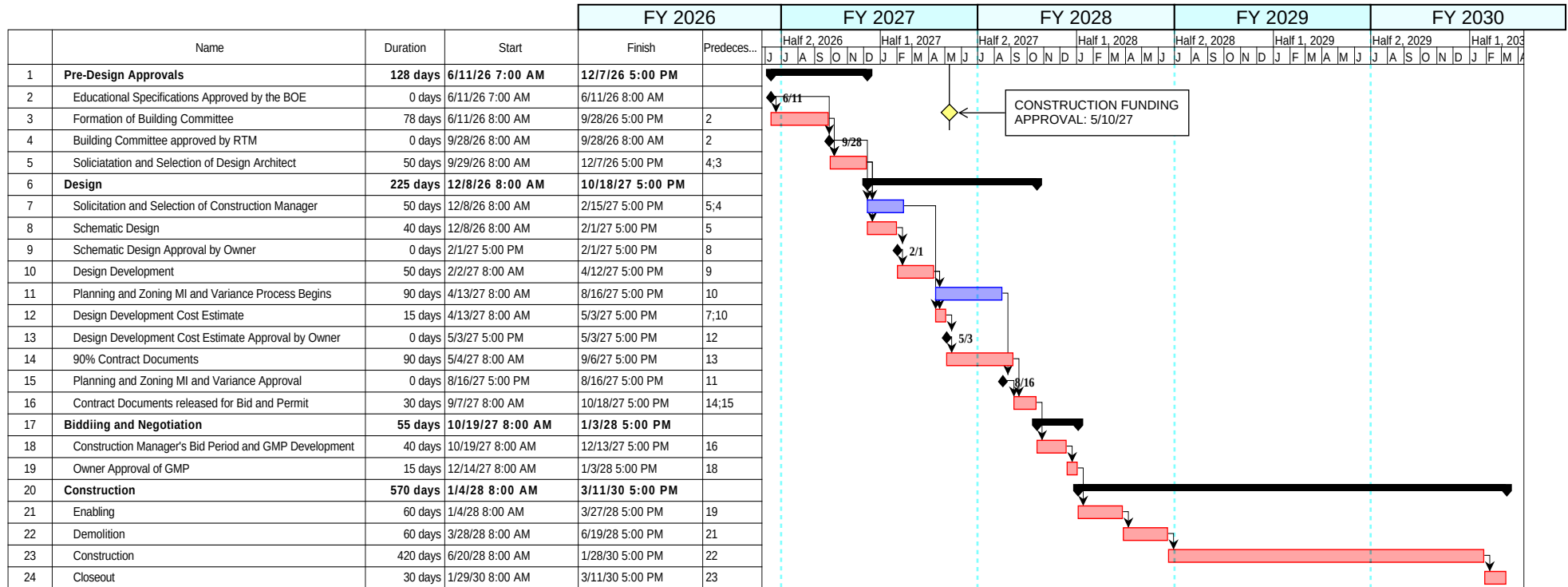
- New Pool Area lighting shall be provided as follows:
 - Continuous linear lighting row structures to be provided longitudinally within the space. Two longitudinal rows with (26) fixtures on 5'-0" centers to be suspended over each side of the pool deck with the array being approximately 135' in length. The ends of the array shall have (12) fixtures at 5'-0" on center on each end. One longitudinal row and one end row shall be a twin mounted back to back configuration to promote indirect lighting over the two seating areas. The fixture count shall be a minimum of (114) fixtures. Suspension points shall be from the structure above with manufactured pendant supports to hang the lighting 10' below the roof deck for indirect lighting application. The light fixture for this application shall be Insight Lighting D2-300-40K-PN-X-277-DIM-TW-IP66-CRF. Provide wireless lighting controls at each fixture with UL-924 capability to enable powering fixtures from emergency power circuits.

- **Materials and Methods**

- Include the following basic materials and methods of construction:

- Wiring will be THHN/THWN copper, installed in EMT conduit to first device or exposed and MC cable for remainder of circuits.
 - Wiring will be THHN/THWN copper, installed in schedule 40 PVC conduit in pool equipment rooms.
 - Receptacles shall be specification grade, NEMA 5-20R etc.
 - Receptacles in child care or similar spaces shall be tamper resistant type.
 - Disconnect switches will be fusible heavy-duty type. NEMA 1 or 3R as required for locations installed.
 - Circuit breakers will be fixed element, thermal magnetic type.
 - Panelboards will contain copper bussing, with hinged door-in-door trim.
 - Branch circuit breakers will be bolt-on type.
 - All conduits, circuits and devices will be labeled.
 - Conduits below slabs will be schedule 40 PVC, with rigid steel conduit sweeps.
 - In all single occupant toilet rooms: emergency call light/bell mounted above the doors and associated call switches shall be provided.
 - Occupancy sensors shall be provided in all lit areas except in utility rooms and other rooms exempted by code.
 - Occupancy sensor switches with wall override shall be provided in all small offices, single occupancy toilet rooms, storage rooms and janitors closets.
 - Corridor and stairwell lighting shall remain on during occupied hours.
 - Locker Room lighting shall be controlled via occupancy sensors.
- **Energy Conservation**
 - All new equipment specified, shall be designed per the 2021 International Energy Conservation Code.
 - Through the use of the building management system (BMS), occupied/unoccupied cycles shall be programmed based on occupancy sensor input to prevent unnecessary energy consumption.

CONCEPTUAL CRITICAL PATH SCHEDULE



GREENWICH HIGH SCHOOL NATATORIUM
RECONSTRUCT-IN-PLACE: OPTION A
6/5/2026

SITE IMPROVEMENT COST SUMMARY - OPTION A (See AECOM Estimate for Detail)					
Tennis Courts					\$ 2,620,000
Bridge					\$ 3,160,000
Roadway					\$ 2,210,000
General Site Work					\$ 2,560,000
CONSTRUCTION COST FOR TENNIS COURTS, ACCESS DRIVEWAY & SITEWORK - OPTION A (See AECOM Estimate for Detail)					\$ 10,550,000
Stormwater Evaluation, Design & Bid Support, Regulatory Approval Support			12.00%		\$ 1,266,000
Construction Oversight, Monitoring & Reporting			11.00%		\$ 1,160,500
PROJECT COST FOR TENNIS COURTS, ACCESS DRIVEWAY & SITEWORK - OPTION A					\$ 12,976,500

DIRECT COST FOR NATATORIUM FACILITY - OPTION A (See PACs estimate for detail)					
Design & Estimating Contingency	\$ 26,969,761	15.00%			\$ 4,045,464
Construction Contingency	\$ 26,969,761	5.00%			\$ 1,348,488
Escalation - 4.5% annual to midpoint	\$ 32,363,713	11.25%	2.5	years	\$ 3,640,918
General Conditions	18	months	\$ 130,000.00		\$ 2,340,000
Precon Lump sum - in soft costs	1	LS	\$ -		\$ -
GL Insurance (GC)	\$ 36,004,631	0.70%			\$ 252,032
State Ed Fund	\$ 26,969,761	0.026%			\$ 7,012
CM P&P Bond	\$ 36,004,631	1.00%			\$ 360,046
CM Fee	\$ 36,004,631	3.00%			\$ 1,080,139
CONSTRUCTION COST FOR NATATORIUM FACILITY - OPTION A					\$ 40,043,861
OWNER'S SOFT COSTS		17.00%			\$ 6,807,456
PROJECT COST FOR NATATORIUM FACILITY - OPTION A					\$ 46,851,317

TOTAL PROJECT COST FOR OPTION A	
NATATORIUM, TENNIS COURTS, ACCESS DRIVEWAY & SITEWORK	\$ 59,827,817



Rough Order of Magnitude Cost Estimate
Preliminary - 2/11/26
Town of Greenwich
Greenwich High School Improvements - Option A

	Description	Quantity	UOM	Contractor Unit Price	Total Direct Cost
IMPROVEMENTS					
1	Tennis Courts - Rebuild with Post-tension Concrete				\$ 2,620,000
	Demolition of Existing Courts	52,000	SF	\$ 2	\$ 103,700
	Court Asphalt w/ Acrylic Coating (Includes Base)	-	SF		\$ -
	Post-tension Concrete ROUGH Estimate from P&R	52,000	SF	\$ 22	\$ 1,140,300
	Vinyl Coated Chain Link 10' Fence	1,600	LF	\$ 144	\$ 229,700
	Equipment Allowance (Posts, Nets, Striping, Benches, Shade)	1	LS	\$ 132,900	\$ 132,900
	Retaining Wall	400	LF	\$ 550	\$ 220,000
	Contingency	30%	%		\$ 547,980
	Contaminated Materials Disposal (assumes 10% >50 ppm PCB soil, 90% <50)	-	TONS	\$ 172	\$ -
	Escalation	10%	%		\$ 243,394
2	Bridge				\$ 3,160,000
	Bridge Construction	1,700	SF	\$ 1,071	\$ 1,820,333
	Contingency	30%	%		\$ 546,100
	Environmental/Contaminated Materials	15%	%		\$ 273,050
	Escalation	10%	%		\$ 280,000
	Aesthetic Treatments	8%	%		\$ 233,559
3	Roadway				\$ 2,210,000
	Roadway Construction	970	LF	\$ 1,270	\$ 1,232,240
	Contingency	25%	%		\$ 308,060
	Contaminated Materials Disposal (assumes 10% >50 ppm PCB soil, 90% <50)	2671	TONS	\$ 171.55	\$ 458,155
	Escalation	10%	%		\$ 204,842
4	General Site Work				\$ 2,560,000
	Erosion control, clearing, grading, drainage, utilities (excludes sanitary sewer realignment), site restoration, GPS selected improvements	1	LS	\$ 600,000	\$ 600,000
	Rock Excavation	280	CY	\$ 264	\$ 73,920
	Asphalt Paving (Parking lot, Pedestrian Path)	8,300	SF	\$ 10	\$ 78,862
	Stormwater Detention and Piping	1	LS	\$ 767,000	\$ 767,000
	Contingency	30%	%		\$ 455,935
	Environmental/Contaminated Materials (excluding bridge and roadway construction)	2,030	TONS	\$ 172	\$ 348,249
	Escalation	10%	%		\$ 232,397
TOTAL CONSTRUCTION COSTS					\$ 10,550,000
	Stormwater Evaluation, Design & Bid Support, Regulatory Approval Support	12%			\$ 1,266,000
	Construction Oversight, Monitoring & Reporting	11%			\$ 1,160,500
TOTAL IMPROVEMENT BUDGETARY COSTS					\$ 12,976,500

Basis Of Estimate

Basis of Estimate

Introduction

PACS has been engaged by Antinozzi Associates Architecture to prepare a Cost estimate for the following project:

This Estimate is based on the following design information:

- 8-20-25_Greenwich High School Option 4.1
- GHS - Overall Floor plan w Site-fl
- GHS Soil Management Plan Figure_01-03-2025
- 2025-09-04-GHS Natatorium Conceptual Specifications
- Greenwich HS Athletic Improvements and Cost Est 8-28-25
- Greenwich High Pool - TLBA Report 2025-03-03
- Greenwich High School Pool Renovation - SD MEP Narrative-Option 4.1

Quantities and Methodology

- The cost estimate is based on the measurement of quantities wherever possible.
- Where actual measurements are not used, parametric measurements are used in conjunction with previous but similar project benchmarks.
- PACS uses a wide range of standard measurement and quantifying methods that are common practice in the construction industry today.

Basis of Pricing

- a) The construction costs shown in this estimate represent the fair market value and are not intended to be a prediction of the lowest bid.
- b) The costs include: labor, material, equipment and the subcontractors overhead and profit. (Subcontractor's Mark Up)
- c) The cost of labor is based on local Prevailing wage rates for all trades.
- d) The construction rates used are based in "today's dollar" and an escalation allowance is included in the Estimate summary.
- e) Our pricing assumes competitive bidding on all elements of the construction work, assuming a minimum of three competitive bidders for all general contractors, subcontractors, materials and vendors.
- f) It is typical in our experience that if fewer bids are received or solicited, prices can be expected to be higher due to lack of competition.
- g) The subcontractor's mark ups include their own overhead, including the cost in the field as well as profit.
- h) PACS has priced this taking into account current market conditions, competition between trades and the cost fluctuations in the construction industry.
- i) Proposal is based on construction being performed on regular hours, except what is required for noisy work and Building system tie-ins.

Design and Pricing Contingency

A Design and Pricing Contingency is used as a budgetary tool that allows for scope and detail not defined during the design stage. As the design becomes more defined as the project passes through the design stages, the Design and Pricing Contingency decreases as more scope and detail is now being shown in the documents and is therefore reflected in the cost estimate as actual trade cost. The Design and Pricing Contingency is reduced to zero at 100% Bid Documents.

Escalation

As outlined above the estimate is calculated using rates that are "today's dollar" and reflect the cost of the project as if it was to bid on the date of issue. Due to construction projects having long design phases and long construction schedules, its is imperative to project the construction cost further ahead into the future to the point at which it is bid out. It is common practice to escalate the cost estimate to the mid point of construction to accommodate for economic inflation. This percentage accounts for this increase.

Construction Contingency

PACS advise that a Construction Contingency is carried for unforeseen project conditions and field changes. Typically we see this in the range of 2.5% to 5.0% dependent on the scope of the project.

Basis Of Estimate**Probable Cost**

It is important for the Owner and Design team to carefully review this cost estimate including all line item descriptions, clarifications, exclusions, unit prices, assumptions, allowances, mark ups and contingencies to ensure the estimate reflects the scope of the project.

In instances where the cost estimate is not in line with the Owner's budgetary objectives, PACS can suggest and evaluate alternate methods to assist bringing the project back in line with the desired budget.

PACS has produced the cost estimate based on the widely practiced methods of cost estimating and aims to reflect the fair market value of the construction project. Our aim is to be not the highest or the lowest in the range of bids but to use our experience and expertise in the construction industry to provide the client with a degree of confidence that the project will be close to our calculated estimate.

Exclusions

This cost estimate excludes the following:

- Premiums for working in inaccessible or partially accessible spaces during construction
- Surplus Stock and Spares
- Unforeseen Conditions (Covered in Construction Contingency)
- Premiums for restrictive and uncompetitive bidding
- Premiums for non-standard work times
- Work beyond the project limits
- Utility Costs - Electric, Gas, Water

Risks to the Cost Estimate

Items that may affect the cost estimate, the list as follows but not limited:

- Changes to the design subsequent to the issue of the documents stated above which this estimate is based on
- Unforeseen and Unknown Structural conditions
- Non Competitive Bid restrictions and the sole sourcing of products/materials from specific vendors
- Restrictive technical specifications that produce a non competitive environment
- Changes to the project schedule that delay the project and therefore have impact on cost
- Incomplete and poorly coordinated documentation
- Access restrictions, unidentified out of hours work policies and phasing restrictions
- Restrictive technical specifications that produce a non competitive environment
- Unforeseen and unknown base building conditions

11/6/2025

Trade Summary

TRADE DIRECT COSTS		Option 4.1		\$/SF
01 50 00	Temporary Facilities and Controls	\$	705,073	\$18.95
02 80 00	Hazardous Components Abatement	\$	168,300	\$4.52
02 41 16	Building Demolition	\$	820,300	\$22.05
02 41 19	Selective Demolition	\$	12,500	\$0.34
03 30 00	Cast-In-Place Concrete	\$	2,339,409	\$62.88
04 20 00	Unit Masonry	\$	1,606,575	\$43.18
05 12 00	Structural Steel	\$	1,913,615	\$51.43
05 50 00	Metal Fabrications	\$	661,424	\$17.78
06 10 00	Rough Carpentry	\$	76,991	\$2.07
06 20 00	Finish Carpentry	\$	109,709	\$2.95
07 10 00	Damp / Waterproofing	\$	22,050	\$0.59
07 21 00	Thermal Insulation	\$	25,200	\$0.68
07 25 00	Air & Vapor Barriers	\$	153,943	\$4.14
07 40 00	Metal Panels	\$	959,484	\$25.79
07 50 00	Membrane Roofing	\$	821,824	\$22.09
07 81 00	Applied Fireproofing	\$	58,143	\$1.56
07 92 00	Joint Sealants	\$	50,000	\$1.34
07 95 00	Expansion Control	\$	27,500	\$0.74
08 10 00	HM / Wood Doors and Frames	\$	210,800	\$5.67
08 30 00	Specialty Doors	\$	20,000	\$0.54
08 41 00	Entrances & Storefront	\$	623,288	\$16.75
08 80 00	Glass & Glazing	\$	131,875	\$3.54
09 21 00	Gypsum Board Assemblies	\$	83,245	\$2.24
09 30 00	Tile	\$	306,244	\$8.23
09 51 00	Acoustical Ceiling	\$	82,668	\$2.22
09 61 10	Vapor Mitigation	\$	6,793	\$0.18
09 65 00	Resilient Flooring	\$	46,016	\$1.24
09 67 00	Resinous Flooring	\$	324,339	\$8.72
09 80 00	Acoustical Treatment	\$	125,000	\$3.36
09 91 00	Painting	\$	195,775	\$5.26
10 11 00	Visual Display Surfaces	\$	20,000	\$0.54
10 14 00	Signage	\$	47,500	\$1.28
10 21 13	Toilet Compartments	\$	28,800	\$0.77
10 26 00	Wall & Door Protection	\$	5,000	\$0.13
10 28 00	Toilet Accessories	\$	27,345	\$0.73
10 41 00	Emergency Access Cabinets	\$	765	\$0.02
10 44 00	Fire Protection Specialties	\$	9,540	\$0.26
11 13 00	Loading Dock Equipment	\$	17,500	\$0.47
11 30 00	Residential Appliances	\$	4,000	\$0.11
12 48 13	Entrance Mats & Frame	\$	30,000	\$0.81
12 52 00	Seating	\$	279,350	\$7.51
13 00 00	Special Construction	\$	4,220,000	\$113.42
14 20 00	Elevators	\$	110,000	\$2.96
21 00 00	Fire Protection	\$	420,347	\$11.30
22 00 00	Plumbing	\$	1,241,862	\$33.38
23 00 00	HVAC	\$	4,259,613	\$114.48
26 00 00	Electrical	\$	2,289,185	\$61.53
33 00 00	Sitework	\$	1,270,873	\$34.16
TOTAL DIRECT COST		\$	26,969,761	\$ 724.86

Greenwich High School - Natatorium Concept Analysis - OPTION A (4.1)



11/6/2025

Estimate Detail

Option 4.1

Element / Description	Quantity	Unit	Unit Rate (\$)	Extension (\$)	Subtotal (\$)
01 50 00 Temporary Facilities and Controls					
Temporary Site Services - CM	37,207	SF	\$ 18.95	\$ 705,073	
Temporary Pool Facility at Tennis Courts - Allowance					
Sprung Structures 130x180 Structure	< N/A >				
Murtha Pools Temporary Pool and Deck system	< N/A >				
Temporary Toilets & Showers (Trailers)	< N/A >				
Support trailers - mechanical systems	< N/A >				
Temporary Sanitary & Water connections	< N/A >				
Temporary Power service	< N/A >				
Subtotal Temporary Facilities and Controls					\$ 705,073
02 11 00 Contaminated Soil Excavation					
No Contaminated Soils identified	< N/A >				
Subtotal Contaminated Soil Excavation					\$ -
02 12 00 Transportation/Disposal of Contaminated Materials					
No items in this Section	< N/A >				
Subtotal Transportation/Disposal of Contaminated Materials					\$ -
02 80 00 Hazardous Components Abatement					
Abatement Allowance - Building Demo	11,220	SF	\$ 15.00	\$ 168,300.00	
Subtotal Hazardous Components Abatement					\$ 168,300
02 41 16 Building Demolition					
Building Demolition - Including Foundations & Slabs	11,220	SF	\$ 15.00	\$ 168,300.00	
Site enabling - Re-route Chilled Water - temporary and permanent relocations	1	LS	\$ 150,000.00	\$ 150,000.00	
Site enabling - Re-route Electrical Panels or Feeders running through proposed demolition	1	LS	\$ 100,000.00	\$ 100,000.00	
Selective demolition, logistics and Protection of existing remaining building to maintain access / use	1	LS	\$ 150,000.00	\$ 150,000.00	
Restore façade of adjacent building after demolition of Natatorium	3,360	SF	\$ 75.00	\$ 252,000.00	
Subtotal Building Demolition					\$ 820,300
02 41 19 Selective Demolition					
<u>Selective interior</u>					
Demo pool equipment from Electrical Room	1	LS	\$ 12,500.00	\$ 12,500.00	
Subtotal Selective Demolition					\$ 12,500
03 30 00 Cast-In-Place Concrete					
Continuous footings - frostwall	218	cyd	\$ 645.00	\$ 140,610.00	
Column footings	323	cyd	\$ 785.00	\$ 253,555.00	
Foundation walls	213	cyd	\$ 965.00	\$ 205,545.00	
Piers	95	cyd	\$ 1,295.00	\$ 123,025.00	
Pool Foundation footing	< N/A >				
Pool foundation wall	< N/A >				
Mech foundation wall	101	cyd	\$ 965.00	\$ 97,465.00	
Interior Haunch	40	cyd	\$ 565.00	\$ 22,600.00	
Elevator foundation walls	11	cyd	\$ 965.00	\$ 10,615.00	
Elevator Mat Slab	185	SF	\$ 35.00	\$ 6,475.00	
Slab on Grade	16,540	SF	\$ 15.00	\$ 248,100.00	
Slab on Deck	7,089	SF	\$ 17.35	\$ 122,994.15	
Suspended CIP Slabs / tiered	3,555	SF	\$ 235.00	\$ 835,425.00	
Stairs Interior CIP	4	cyd	\$ 2,250.00	\$ 9,000.00	
Radon pits	4	ea	\$ 3,500.00	\$ 14,000.00	
Housekeeping Equipment pads	1	ls	\$ 25,000.00	\$ 25,000.00	
Underpinning Allowance	60	cyd	\$ 3,750.00	\$ 225,000.00	
Subtotal Cast-In-Place Concrete					\$ 2,339,409
04 20 00 Unit Masonry					
Envelope back-up 8" CMU (minus 15% openings for Glazing)	20,045	SF	\$ 37.00	\$ 741,653.90	
Interior CMU Partitions	14,354	SF	\$ 32.00	\$ 459,328.00	
Brick veneer @ New Construction 50%	8,450	SF	\$ 48.00	\$ 405,592.80	
Brick veneer @ Stairs & Ramps	< N/A >				
Subtotal Unit Masonry					\$ 1,606,575
05 12 00 Structural Steel					
Structural Steel and roof deck @ 11.0#/SF - LL	< N/A >				
Structural Steel and roof deck @ 11.0#/SF - DL	141	Ton	\$ 7,500.00	\$ 1,054,886.25	
Structural Steel and roof deck @ 11.0#/SF - CL	54	Ton	\$ 7,500.00	\$ 403,095.00	
Support and stub columns for roof screens	200	LF	\$ 165.00	\$ 33,000.00	
Metal Decking - B Deck	25,682	SF	\$ 6.45	\$ 165,648.90	
Metal Decking - Composite 3"	7,089	SF	\$ 7.45	\$ 52,813.05	
Metal Decking - Acoustical Decking Premium	25,682	SF	\$ 7.95	\$ 204,171.90	
Subtotal Structural Steel					\$ 1,913,615

Greenwich High School - Natatorium Concept Analysis - OPTION A (4.1)



11/6/2025

Estimate Detail

Option 4.1

Element / Description	Quantity	Unit	Unit Rate (\$)	Extension (\$)	Subtotal (\$)
05 40 00 Cold Formed Metal Framing					
CFMF Envelope Back-up - New		< N/A >			
Subtotal Cold Formed Metal Framing					\$ -
05 50 00 Metal Fabrications					
Misc Metals - Misc lintels & Connections allowance	37,207	sf	\$ 1.25	\$ 46,508.75	
Baseplates - Set and grouted	52	ea	\$ 575.00	\$ 29,900.00	
Metal Pan stairs with railings - Egress	2	flt	\$ 33,500.00	\$ 67,000.00	
Roof Screens - Louvers and back-up structure	1,600	sf	\$ 75.00	\$ 120,000.00	
Railings - Stainless	112	lf	\$ 345.00	\$ 38,640.00	
Glass Railings - Concourse	625	lf	\$ 575.00	\$ 359,375.00	
Subtotal Metal Fabrications					\$ 661,424
06 10 00 Rough Carpentry					
Window Blocking	3,528	LF	\$ 12.50	\$ 44,103.00	
Roof Blocking	1,165	LF	\$ 17.50	\$ 20,387.50	
Inwall and OnWall blocking	1	LS	\$ 12,500.00	\$ 12,500.00	
Subtotal Rough Carpentry					\$ 76,991
06 20 00 Finish Carpentry					
Casework & Trims allowances					
Credenza / Top at Alumni Room- officials room	43	lf	\$ 575.00	\$ 24,725.00	
Ticket room countertops	38	lf	\$ 275.00	\$ 10,450.00	
Scorer counter - top with RAKKS	29	lf	\$ 275.00	\$ 7,975.00	
TR Vanity	23	lf	\$ 290.00	\$ 6,670.00	
Ticket counter	7	lf	\$ 365.00	\$ 2,555.00	
Solid Surface Window Sills	882	LF	\$ 65.00	\$ 57,333.90	
Subtotal Finish Carpentry					\$ 109,709
07 10 00 Damp / Waterproofing					
Dampproofing & Drainage Board	3,150	sf	\$ 7.00	\$ 22,050.00	
Subtotal Damp / Waterproofing					\$ 22,050
07 21 00 Thermal Insulation					
Foundation insulation	3,600	sf	\$ 7.00	\$ 25,200.00	
Spray Foam insulation @ CFMF		< N/A >			
Subtotal Thermal Insulation					\$ 25,200
07 25 00 Air & Vapor Barriers					
Envelope AVB	20,045	SF	\$ 7.68	\$ 153,943.30	
Subtotal Air & Vapor Barriers					\$ 153,943
07 40 00 Metal Panels & Siding Panels					
Rainscreen Systems Metal panel Systems @ 50%	8,450	SF	\$ 110.00	\$ 929,483.50	
Exterior Soffits	600	SF	\$ 50.00	\$ 30,000.00	
Subtotal Metal Panels & Siding Panels					\$ 959,484
07 50 00 Membrane Roofing					
Roofing Allowance - New roofing	25,682	SF	\$ 32.00	\$ 821,824	
Subtotal Membrane Roofing					\$ 821,824
07 62 00 Sheet Metal Flashings & Trim					
Included with Roofing		< Included >		\$ -	
Subtotal Sheet Metal Flashings & Trim					\$ -
07 81 00 Applied Fireproofing					
Fireproofing	9,772	SF	\$ 5.95	\$ 58,143.40	
Subtotal Applied Fireproofing					\$ 58,143
07 84 00 Penetration Firestopping					
In Trades					\$ -
Subtotal Penetration Firestopping					\$ -
07 92 00 Joint Sealants					
Caulking & Sealants	1	LS	\$ 50,000.00	\$ 50,000.00	
Subtotal Joint Sealants					\$ 50,000
07 95 00 Expansion Control					
Expansion Control Allowance	1	ls	\$ 27,500.00	\$ 27,500.00	
Subtotal Expansion Control					\$ 27,500
08 10 00 Doors Frames and Hardware					
Stainless Frame 3070	6	EA	\$ 1,350.00	\$ 8,100.00	
Stainless Frame 6070	3	EA	\$ 1,750.00	\$ 5,250.00	
HM Frame 3070	14	EA	\$ 475.00	\$ 6,650.00	
HM Frame 6070	1	EA	\$ 750.00	\$ 750.00	
Door flush 3070 Stainless	13	EA	\$ 1,250.00	\$ 16,250.00	
Door flush 3070 HM / WD	12	EA	\$ 650.00	\$ 7,800.00	
Door flush 3070 FRP	3	EA	\$ 850.00	\$ 2,550.00	
Hardware per leaf pass	18	EA	\$ 900.00	\$ 16,200.00	
Hardware per leaf Panic	8	EA	\$ 1,500.00	\$ 12,000.00	
Storefront 3070 Interior	9	EA	\$ 4,250.00	\$ 38,250.00	
Storefront 3070 Exterior	8	EA	\$ 5,250.00	\$ 42,000.00	
Electrified locksets Allowance -	11	EA	\$ 5,000	\$ 55,000.00	
Subtotal Doors Frames and Hardware					\$ 210,800
08 30 00 Specialty Doors					
Coiling OHD 10x12 with operator	1	LS	\$ 20,000.00	\$ 20,000.00	
Subtotal Specialty Doors					\$ 20,000
08 41 00 Entrances & Storefront					
Punched Storefront Windows @ 15% Envelope wall	4,410	SF	\$ 125.00	\$ 551,288	
Aluminum Storefronts Interior	800	SF	\$ 90.00	\$ 72,000.00	
Subtotal Entrances & Storefront					\$ 623,288

Greenwich High School - Natatorium Concept Analysis - OPTION A (4.1)



11/6/2025

Estimate Detail

Option 4.1

Element / Description		Quantity	Unit	Unit Rate (\$)	Extension (\$)	Subtotal (\$)
08 44 00	Metal Framed Curtainwall					
	None identified		< N / A >			
	Subtotal Metal Framed Curtainwall					\$ -
08 80 00	Glass & Glazing					
	Translucent wall systems - Kalwall or similar	1,055	SF	\$ 125.00	\$ 131,875	
	Subtotal Glass & Glazing					\$ 131,875
08 90 00	Louvers & Vents					
	In MEP Trade					
	Subtotal Louvers & Vents					\$ -
09 21 00	Gypsum Board Assemblies					
	Gyp - Interior @ CFMF Envelope		< N / A >			
	Gyp Partitions - CFMF Standard partitions		< N / A >			
	Gyp Partitions - Misc Chases and Transitions	1	ls	\$ 75,000.00	\$ 75,000.00	
	Gyp Ceilings		< N / A >			
	Gyp Soffits	485	sf	\$ 17.00	\$ 8,245.00	
	Subtotal Gypsum Board Assemblies					\$ 83,245
09 30 00	Tile					
	Porcelain Mosaic Tile floors with crack suppression membrane - Toilet Rooms	10,060	SF	\$ 18.00	\$ 181,080.00	
	Porcelain Large format Tile floors with crack suppression membrane Lobbies	2,232	SF	\$ 22.00	\$ 49,104.00	
	Porcelain Tile Base	1,985	LF	\$ 20.00	\$ 39,700.00	
	Porcelain wall tile at TR walls (Toilet room wet walls)	2,020	SF	\$ 18.00	\$ 36,360.00	
	Subtotal Tile					\$ 306,244
09 51 00	Acoustical Ceiling					
	ACT Admin areas 2x2	7,096	SF	\$ 11.65	\$ 82,668.40	
	Subtotal Acoustical Ceiling					\$ 82,668
09 64 00	Wood Flooring					
	None identified		< N / A >			
	Subtotal Wood Flooring					\$ -
09 61 10	Vapor Mitigation					
	Topical Moisture Mitigation	3,575	SF	\$ 1.90	\$ 6,792.50	
	Subtotal Vapor Mitigation					\$ 6,793
09 65 00	Resilient Flooring					
	LVT	1,750	SF	\$ 7.65	\$ 13,387.50	
	Rubber non slip	1,250	SF	\$ 13.00	\$ 16,250.00	
	Sealed Concrete	1,158	SF	\$ 1.65	\$ 1,910.70	
	Sealed Concrete - Lower level		< N / A >			
	Rubber stair treads	252	LF	\$ 35.00	\$ 8,820.00	
	Rubber floor base	323	LF	\$ 3.65	\$ 1,178.95	
	Resilient floor prep	3,575	SF	\$ 1.25	\$ 4,468.75	
	Subtotal Resilient Flooring					\$ 46,016
09 66 00	Terrazzo					
	None identified		< N / A >			
	Subtotal Terrazzo					\$ -
09 67 00	Resinous Flooring					
	Duraflex Epoxy flooring	11,157	LF	\$ 27.00	\$ 301,239.00	
	Duraflex Epoxy base	1,650	LF	\$ 14.00	\$ 23,100.00	
	Subtotal Resinous Flooring					\$ 324,339
09 68 00	Carpet					
	Carpeting		< N / A >			
	Carpet Floor Prep		< N / A >			
	Subtotal Carpet					\$ -
09 80 00	Acoustical Treatment					
	Acoustical Treatments - LS Allowance	1	LS	\$ 125,000.00	\$ 125,000.00	
	Subtotal Acoustical Treatment					\$ 125,000
09 91 00	Painting					
	Painting - Historic SF Cost - Natatorium Epoxy	37,207	SF	\$ 5.00	\$ 186,035.00	
	Wallcoverings & Graphics allowance	1	LS	\$ 7,500.00	\$ 7,500.00	
	Painting -Doors & Frames	28	EA	\$ 80.00	\$ 2,240.00	
	Subtotal Painting					\$ 195,775
10 11 00	Visual Display Surfaces					
	Allowance	1	LS	\$ 20,000.00	\$ 20,000.00	
	Subtotal Visual Display Surfaces					\$ 20,000
10 14 00	Signage					
	Signage Allowance - Pin Letters	20	EA	\$ 375.00	\$ 7,500.00	
	Signage Allowance -Code	1	LS	\$ 40,000.00	\$ 40,000.00	
	Subtotal Signage					\$ 47,500
10 21 00	Cubicles					
	None identified		< N / A >			
	Subtotal Cubicles					\$ -
10 21 13	Toilet Compartments					
	Toilet Compartments - ADA	2	EA	\$ 2,250.00	\$ 4,500.00	
	Toilet Compartments - STD	6	EA	\$ 1,735.00	\$ 10,410.00	
	Toilet Compartments - Urinal	2	EA	\$ 745.00	\$ 1,490.00	
	Toilet Compartments - Shower curtain & Changing curtains	8	EA	\$ 1,550.00	\$ 12,400.00	
	Subtotal Toilet Compartments					\$ 28,800
10 21 23	Cubicle Curtain & Track					
	None identified		< N / A >			
	Subtotal Cubicle Curtain & Track					\$ -

Greenwich High School - Natatorium Concept Analysis - OPTION A (4.1)



11/6/2025

Estimate Detail

Option 4.1

Element / Description		Quantity	Unit	Unit Rate (\$)	Extension (\$)	Subtotal (\$)
10 22 00	Operable Partitions					
	None identified					
	Subtotal Operable Partitions		< N / A >			\$ -
10 26 00	Wall & Door Protection					
	Corner Guards - Allowance	1	LS	\$ 5,000.00	\$ 5,000.00	
	Subtotal Wall & Door Protection					\$ 5,000
10 28 00	Toilet Accessories					
	TA Grab bar	24	EA	\$ 195.00	\$ 4,680	
	TA TP Dispenser	16	EA	\$ 125.00	\$ 2,000	
	TA Mirror	14	EA	\$ 395.00	\$ 5,530	
	TA Soap Dispenser	12	EA	\$ 165.00	\$ 1,980	
	TA San Nap Disposal	11	EA	\$ 145.00	\$ 1,595	
	TA PT Dispenser	8	EA	\$ 295.00	\$ 2,360	
	Electric hand dryers	8	EA	\$ 1,150.00	\$ 9,200	
	Subtotal Toilet Accessories					\$ 27,345
10 41 00	Emergency Access Cabinets					
	Knox Box	1	EA	\$ 765.00	\$ 765.00	
	Subtotal Emergency Access Cabinets					\$ 765
10 44 00	Fire Protection Specialties					
	FE Cabinets and Extinguishers	12	EA	\$ 795.00	\$ 9,540.00	
	Subtotal Fire Protection Specialties					\$ 9,540
10 51 00	Lockers					
	Lockers - Locker rooms		< N / A >			
	Lockers - Team Room		< N / A >			
	Locker Bench		< N / A >			
	Subtotal Lockers					\$ -
10 73 13	Fabricated Structures					
	Fabricated Structures - Not included		< N / A >			
	Subtotal Fabricated Structures					\$ -
11 13 00	Loading Dock Equipment					
	None identified	1	LS	\$ 17,500.00	\$ 17,500.00	
	Subtotal Loading Dock Equipment					\$ 17,500
11 30 00	Residential Appliances					
	Residential Equipment - Refridgerator / Freezer	1	LS	\$ 2,750.00	\$ 2,750.00	
	Residential Equipment - Microwave - Convection	1	LS	\$ 1,250.00	\$ 1,250.00	
	Subtotal Residential Appliances					\$ 4,000
11 40 00	Foodservice Equipment					
	None identified		< N / A >			
	Subtotal Foodservice Equipment					\$ -
11 52 00	Audio-Visual Equipment					
	None identified		< N / A >			
	Subtotal Audio-Visual Equipment					\$ -
11 53 00	Laboratory Fume Hood					
	None identified		< N / A >			
	Subtotal Laboratory Fume Hood					\$ -
11 61 00	Theater & Stage Equipment					
	None identified		< N / A >			
	Subtotal Theater & Stage Equipment					\$ -
11 66 00	Athletic Equipment					
	In Pool Equipment budget		< N / A >			
	Subtotal Athletic Equipment					\$ -
11 90 00	Miscellaneous Equipment					
	None identified		< N / A >			
	Subtotal Miscellaneous Equipment					\$ -
12 20 00	Window Treatment					
	None identified		< N / A >			
	Subtotal Window Treatment					\$ -
12 35 53	Laboratory Casework					
	None identified		< N / A >			
	Subtotal Laboratory Casework					\$ -
12 48 13	Entrance Mats & Frame					
	Entrance Foot Grills - recessed	400	sf	\$ 75.00	\$ 30,000.00	
	Subtotal Entrance Mats & Frame					\$ 30,000
12 52 00	Seating					
	Bleachers - Seat on Tiered concrete	1,375	LF	\$ 110.00	\$ 151,250.00	
	Bleachers - Retractable 5 row	122	LF	\$ 1,050.00	\$ 128,100.00	
	Subtotal Seating					\$ 279,350
13 00 00	Special Construction					
	Pool Budget Myrtha Pools	1	LS	\$ 1,900,000.00	\$ 1,900,000.00	
	CM - Myrtha Markup	1	LS	\$ 285,000.00	\$ 285,000.00	
	Filtration / Plumbing / Surge tank	1	LS	\$ 775,000.00	\$ 775,000.00	
	Slab / Footers / Excavation for Pool only	1	LS	\$ 670,000.00	\$ 670,000.00	
	Competition Blocks /deck/diving equipment	1	LS	\$ 390,000.00	\$ 390,000.00	
	Timing System	1	LS	\$ 200,000.00	\$ 200,000.00	
	Subtotal Special Construction					\$ 4,220,000

Greenwich High School - Natatorium Concept Analysis - OPTION A (4.1)



11/6/2025

Estimate Detail

Option 4.1

Element / Description	Quantity	Unit	Unit Rate (\$)	Extension (\$)	Subtotal (\$)
14 20 00 Elevators					
New Elevator / stop	2	stop	\$ 55,000.00	\$ 110,000.00	
ADA Lift	< N / A >				
Subtotal Elevators					\$ 110,000
21 00 00 Fire Protection					
Fire Protection -	37,207	SF	\$ 11.30		
New Riser & PRZ / Feeds to new zones	1.00	LS	\$ 17,500.00	\$ 17,500.00	
Fire Pump & Jockey Pump	1.00	LS	\$ 80,000.00	\$ 80,000.00	
Fire Protection Systems - Distribution & Heads	37,207.00	SF	\$ 7.65	\$ 284,633.55	
Fire Protection Systems - Distribution & Heads - LL Option 5	< N / A >				
Fire Protection Systems - Piping premium nickel / teflon coated	10%	LS	\$ 382,133.55	\$ 38,213.36	
Occupied renovation premium -	< N / A >				
Subtotal Fire Protection					\$ 420,347
22 00 00 Plumbing					
Cut / Cap / MakeSafe for demolition	11,220	SF	\$ 0.25	\$ 2,805.00	
Plumbing Fixtures					
Plumbing Fixtures - Water Closet	14	EA	\$ 2,250.00	\$ 31,500.00	
Plumbing Fixtures - Sink	8	EA	\$ 1,795.00	\$ 14,360.00	
Plumbing Fixtures - Lav	2	EA	\$ 2,150.00	\$ 4,300.00	
Plumbing Fixtures - Urinal	2	EA	\$ 1,850.00	\$ 3,700.00	
Plumbing Fixtures - Shower unit	8	EA	\$ 3,500.00	\$ 28,000.00	
Plumbing Fixtures - Water Cooler	3	EA	\$ 3,750.00	\$ 11,250.00	
Plumbing Fixtures - Mop Sink / Hydrant custodial	1	EA	\$ 2,500.00	\$ 2,500.00	
Rough in DOM & SAN for fixtures	38	EA	\$ 900.00	\$ 34,200.00	
Domestic Water Distribution	37,207	SF	\$ 8.00	\$ 297,656.00	
Sanitary Waste	37,207	SF	\$ 5.00	\$ 186,035.00	
Rain Water Drainage	37,207	SF	\$ 3.76	\$ 139,898.32	
Gas Piping systems	37,207	SF	\$ 2.24	\$ 83,343.68	
Other Plumbing Systems (includes Subcontractor Mgmt, Submittals, testing, Temp svcs)	37,207	SF	\$ 5.25	\$ 195,336.75	
LL Plumbing - Shell construction Underslab and Core TR's (2)	< N / A >				
Occupied renovation premium	20%	LS	\$ 1,034,884.75	\$ 206,976.95	
Subtotal Plumbing					\$ 1,241,862
23 00 00 HVAC					
Cut / Cap / MakeSafe - Existing building for demo	11,220	SF	\$ 0.25	\$ 2,805.00	
Heat Generating Systems - Heat exchanger, pumps and Glycol System to support Dectron units	1	LS	\$ 50,000.00	\$ 50,000.00	
Unit heaters for LL	< N / A >				
Cooling Generating Systems	< Included Below >				
Distribution Systems	37,207	SF	\$ 30.52	\$ 1,135,557.64	
Terminal & Package Units					
AHU 1 & AHU 2 Dectron with Dehumidification	40,000	CFM	\$ 38.50	\$ 1,540,000.00	
Aaon ERW	1,200	CFM	\$ 26.00	\$ 31,200.00	
Aaon AHU RN	4,000	CFM	\$ 28.00	\$ 112,000.00	
Aaon AHU RN	< N / A >				
Controls & Instrumentation - Tied to Campus System	37,207	SF	\$ 10.00	\$ 372,070.00	
Systems Testing & Balancing	37,207	SF	\$ 0.95	\$ 35,346.65	
Other HVAC Systems - Management and General Conditions	37,207	SF	\$ 5.10	\$ 189,755.70	
Occupied renovation premium	20%	LS	\$ 3,954,392.37	\$ 790,878.47	
Subtotal HVAC					\$ 4,259,613
26 00 00 Electrical					
Cut / Cap / MakeSafe / Demolition	11,220	sf	\$ 1.25	\$ 14,025.00	
Normal Power Distribution					
New Service 1600A 480V - 2000A Bus for future PV Array	< N / A >				
MDP-H 1600A 3P 480V Panels with breakers	< N / A >				
MDP-G 800A 3P 480V Panels with breakers	2	EA	\$ 22,500.00	\$ 45,000.00	
PP-G 125A - Replace in alternate location	1	EA	\$ 9,500.00	\$ 9,500.00	
MP1 400A 3P 480V MCB Panel 42P	1	EA	\$ 12,500.00	\$ 12,500.00	
GP1 200A 3P 208V MCB Panel 42P	1	EA	\$ 9,500.00	\$ 9,500.00	
GPL 800A 3P 208V MCB Panel 42P	< N / A >				
GP1 & GP2 225A 3P 208V MCB Panel 42P	< N / A >				
MPH 600A 3P 480V MCB Panel 84P	< N / A >				
MPL 225A 3P 208V MCB Panel 42P	< N / A >				
MP1 & MP2 150A 3P 208V MCB Panel 42P	< N / A >				
LPH 200A 3P 480V MCB Panel 42P	< N / A >				
TX 75 KVA	1	LS	\$ 10,500.00	\$ 10,500.00	
TX 112 KVA	< N / A >				
TX 300 KVA	< N / A >				
Feeder 100A	< N / A >				
Feeder 150A	< N / A >				
Feeder 200A	200	LF	\$ 95.00	\$ 19,000.00	
Feeder 225A	< N / A >				
Feeder 400A	200	LF	\$ 175.00	\$ 35,000.00	
Feeder 600A	< N / A >				
Feeder Primary Secondary @ 75KVA TX	1	LS	\$ 2,500.00	\$ 2,500.00	
Feeder Primary Secondary @ 112KVA TX	< N / A >				
Feeder Primary Secondary @ 300KVA TX	< N / A >				
Emergency Power & Distribution -					
Generator - Diesel 200KW	< N / A >				
Generator Feeders - Site	< N / A >				
ATS 100A	< N / A >				
ATS 200A	< N / A >				
Panel EL-H 100A 3P 480V 42P	< N / A >				
Panel OS-H 200A 3P 480V 42P	< N / A >				
Panel OSP-H 100A 3P 480V 42P	< N / A >				
Panel OSL 300A 3P 208V 42P	< N / A >				
Panel OS1 & OS2 150A 3P 208V 42P	< N / A >				

Greenwich High School - Natatorium Concept Analysis - OPTION A (4.1)



11/6/2025

Estimate Detail

Option 4.1

Element / Description	Quantity	Unit	Unit Rate (\$)	Extension (\$)	Subtotal (\$)
Machine & Equipment Power					
AHU1 & AHU2 - 100A 100' average	2	EA	\$ 5,000.00	\$ 10,000.00	
4 Ton AHU - 30A 100'	1	EA	\$ 2,750.00	\$ 2,750.00	
6 Ton AHU - 30A 100'	< N / A >				
10 Ton AHU - 60A 100'	1	EA	\$ 4,250.00	\$ 4,250.00	
Elevator feed & Disconnect	1	EA	\$ 3,750.00	\$ 3,750.00	
DOM WH	1	EA	\$ 1,750.00	\$ 1,750.00	
Pool Equipment feeders - Pumps	3	EA	\$ 2,750.00	\$ 8,250.00	
Plumbing fixture sensor power	38	EA	\$ 225.00	\$ 8,550.00	
Grounding & Bonding - Pool, Equipment, Starting blocks, Platforms	1	LS	\$ 20,000.00	\$ 20,000.00	
Lighting Fixtures & Branch Wiring / Controls	37,207	sf	\$ 21.00	\$ 781,347.00	
Device Branch	37,207	sf	\$ 4.60	\$ 171,152.20	
Emergency Lighting	37,207	sf	\$ 2.22	\$ 82,599.54	
Lightning and Power Specialties -	37,207	sf	\$ 0.85	\$ 31,625.95	
LL Shell Space "Electrical"	< N / A >				
Miscellaneous Systems	37,207	sf	\$ 3.28	\$ 122,038.96	
Testing and Commissioning	37,207	sf	\$ 1.25	\$ 46,508.75	
27000 Communications & LV					
Telephone and Communications Systems	37,207	sf	\$ 4.89	\$ 181,942.23	
Av Systems	37,207	sf	\$ 6.08	\$ 226,218.56	
Public Address Systems	37,207	sf	\$ 1.31	\$ 48,741.17	
Program Clock System	37,207	sf	\$ 0.97	\$ 36,090.79	
BDA Systems	1	LS	\$ 45,000.00	\$ 45,000.00	
Security Access Control & CCTV	37,207	sf	\$ 5.25	\$ 195,336.75	
Fire Alarm System	37,207	sf	\$ 3.25	\$ 120,922.75	
Fire Alarm System - Shell space	< N / A >				
Occupied renovation premium -	10%	LS	\$ 2,306,350	\$ 230,634.97	
Subtotal Electrical					\$ 2,289,185
33 00 00 Sitework					
Building Earthwork - Structural Excavation and prep	25,682	SF	\$ 12.25	\$ 314,604.50	
Excavate additional pool depression - load & Export	2,136	cyd	\$ 36.00	\$ 76,896.00	
Excavate below grade mechanical - load & Export	2,225	cyd	\$ 36.00	\$ 80,100.00	
Import and place basement mechanical foundations	1,782	cyd	\$ 42.00	\$ 74,844.00	
Backfill existing pool depression - Option 5	< N / A >				
Rock allowance option 5 - Mass Rock Blasting / excavation/ export / replacement (50% Excavation volume)	< N / A >				
Civil Utilities					
Stormwater - Stormwater Stems allowance	1	LS	\$ 25,000.00	\$ 25,000.00	
Sanitary - Connection to nearest on site Sanitary MH	1	LS	\$ 5,000.00	\$ 5,000.00	
Water - New 3" DOM Water service, entrance and Connections allowance	1	LS	\$ 20,000.00	\$ 20,000.00	
Fire Water - new 6" Fire water service, entrance and Connections allowance with 1 added hydrant	1	LS	\$ 30,000.00	\$ 30,000.00	
Electric - New Electrical Service -- Primary service conduits, Transformer pad, 50' secondary	< N / A >				
Telecom - Service entrance - allowance	1	LS	\$ 25,000.00	\$ 25,000.00	
Rock - allowance - Trench rock for utilities	213	CYD	\$ 175.00	\$ 37,333.33	
Civil Demo / E&S					
E&S Controls allowance	1	LS	\$ 12,500.00	\$ 12,500.00	
Clearing & Grubbing	< N / A >				
Demo pavements / Sidewalks	1	LS	\$ 20,000.00	\$ 20,000.00	
Demo Tennis Courts - Post tensioned	< N / A >				
Civil Hardscape / Landscape					
Sidewalks allowance	2,500	SF	\$ 15.00	\$ 37,500.00	
Lawns Restoration allowance	5,000	SF	\$ 2.00	\$ 10,000.00	
Courtyard - Imported fills	500	CYD	\$ 50.00	\$ 25,000.00	
Plantings Allowance	1	LS	\$ 7,500.00	\$ 7,500.00	
Site furnishings (Benches, Tables, Bike racks, Trash Recept, etc)	1	LS	\$ 25,000.00	\$ 25,000.00	
Exterior Concrete					
Footings - Exterior Stairs & Ramps	126	cyd	\$ 645.00	\$ 81,270.00	
Foundations Exterior Stairs & Ramps	85	cyd	\$ 865.00	\$ 73,525.00	
CIP Stairs - Exterior stairs & Ramps	44	cyd	\$ 1,550.00	\$ 68,200.00	
Exterior Flatwork Ramps and stair landings	1,485	sf	\$ 15.00	\$ 22,275.00	
Exterior Flatwork - Stamped colored concrete patio	1,062	sf	\$ 27.50	\$ 29,205.00	
Veneer - Ext stairs and ramp walls	1,265	sf	\$ 50.00	\$ 63,250.00	
Exterior Railings / Misc metals					
Exterior railings - wall	< N / A >				
Exterior railings - guiderails	306	lf	\$ 345.00	\$ 105,570.00	
Stair nosings	20	lf	\$ 65.00	\$ 1,300.00	
Subtotal Sitework					\$ 1,270,873

DATE: 09-13-2025

PROJECT#: 25216



PROJECT:

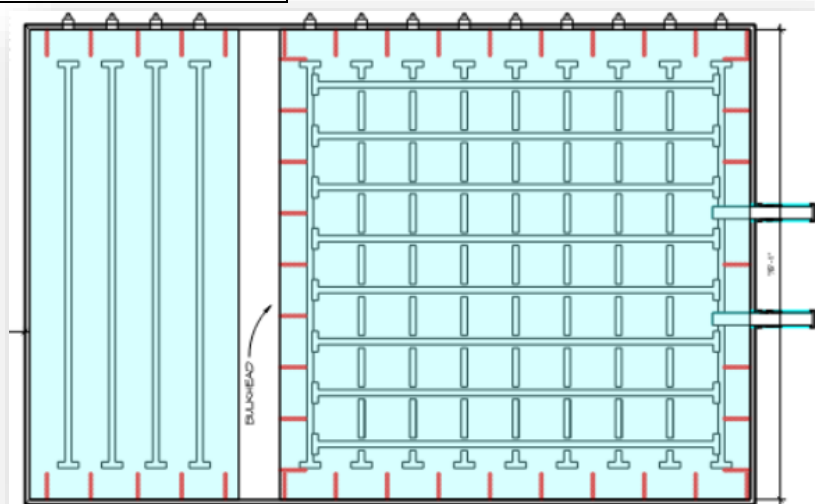
Greenwich High School
10 Hillside Road, Greenwich, CT 06830

CLIENT:

Greenwich High School

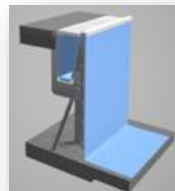
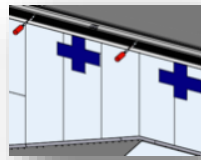
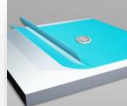
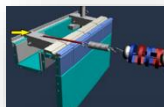
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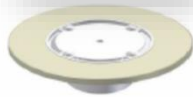
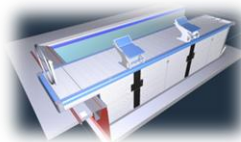
SD: TLBA (02-16-2023)



Myrtha Materials Progress Budget

POOL #1:	TRAINING & COMPETITION
DIMENSIONS:	D=115FT X 75FT
	P=380 LF
	A=8,625 SF

MYRTHA MATERIALS BREAKOUT:	ITEM
Wall & Gutter Structures	
75 LF Myrtha Standard Panel w/Buttress System & Classic Competition Rim Flow Gutter w/PVC Grating @ 3.5ft Depth 160 LF Myrtha Standard Panel w/Buttress System & Classic Competition Rim Flow Gutter w/PVC Grating @ 6ft Depth 47 LF Myrtha Standard Panel w/Buttress System & Classic Competition Rim Flow Gutter w/PVC Grating @ 11.5ft Depth	
67 LF Myrtha Sloped Panel w/Buttress System & Classic Competition Rim Flow Gutter w/PVC Grating @ 3.5ft-6ft Depth 31 LF Myrtha Sloped Panel w/Buttress System & Classic Competition Rim Flow Gutter w/PVC Grating @ 6ft-11.5ft Depth	
6 Myrtha Recessed Step Panels w/Gutter-Mounted Handrails	
Membrane & PVC Components	
5,900 SF Myrtha Standard Evolution Membrane	
2,900 SF Myrtha Anti-Slip Evolution Membrane	
Competition & Lane Components	
39 Myrtha Gutter-Mounted Lane Rope Anchors w/Extensions	
22 Myrtha Applied PVC Floor Racing Lines (2 Courses)	

44 Myrtha Applied PVC Wall Targets (2 Courses)	
Hydraulic Components	
16 Myrtha STZ 3" Sidewall Inlets w/Stainless Steel Grating	
1 Myrtha PVC Floor Secondary Drain	
3 Myrtha/Daldorado Main Drains (18"x36") w/SOFA Compliant Grating	
Accessories	
6.5ft x 75ft Myrtha Flow-Through SS Bulkhead w/Deck-Mounted Track & Drive System 9 Lane Rope Anchors 8 Wall Targets - Timing System Tray	
MYRTHA PACKAGE RETAIL TOTAL:	\$1,629,300.00 USD
MYRTHA PARTNER/DIRECT PURCHASE DISCOUNT:	-\$271,600.00 USD
MYRTHA POOL PACKAGE TOTAL:	\$1,357,700.00 USD

Myrtha Installation Estimate (Not Included in Price)	Labor Duration/Budget
Pool #1-Competition w/Bulkhead	366 Technician Days (\$549,000.00)

EXCLUSIONS: - Installation of Components - Mechanical Systems - Site Works, Prep & Landscaping - Concrete Slab & Footers - Decks, Restroom & Locker Facilities - Additional Pool, Safety & Deck Equipment - Deck-Mounted Handrails, Ladders & Stanchions	EXCLUSIONS: - Structure Tiling & Coping - Surge Tanks - Plumbing & Connections - Electrical Wiring & Connections - Depth Configuration - Underwater Lights & Niches - Demolition
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Facility Assessment and Recommendations for the Swimming Pool at Greenwich High School Greenwich, CT



TLB Architecture, LLC
92 West Main Street
Chester, Connecticut
March 3, 2025
TLBA Project # 2025-002

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II. Executive Summary

III. Existing Conditions Analysis

IV. Planning Options

V. Appendices

1. Structural Field Report—Prepared by E2 Engineers
2. MEP—Field Report—Prepared by CES
3. 1997 Department of Health Approval for Renovations

I. Introduction

Greenwich High School (GHS), located at 10 Hillside Road in Greenwich CT, is home Greenwich Cardinals Swimming, Diving and Water Polo Teams, which train and compete in the swimming pool located within the high school. The swimming pool was initially constructed in 1968 and had a major renovation in 1997. Main Drains covers were replaced in 2008, following the enactment of the Virginia Graeme Baker Pool and Spa Safety Act. No other major upgrades or renovations have been done since, though life-cycle equipment replacement and routine and deferred maintenance has been on-going.

The swimming pool is an 8-lane, 25-yard swimming pool with a single 1-meter diving board. The facility provides aquatic competitive swimming and diving and water polo programs for the high school, as well as other community aquatic programming. The GHS swimming and diving programs have enjoyed great success over the years, boasting multiple FCIAC and State Championships, as well as many personal accomplishments in the pool. The water polo team has been equally successful with multiple New England Championships, Eastern / Mid-Atlantic Titles and FCIAC, CIAC and State Open Championships. Sustainability of the pool is vital to continued success of the program.

At the time the field work was done for this report, the pool was filled with water and as such, precise field measurements were not taken. Dimensions, depths and clearances indicated within this report are based on available documentation, depth markings on the pool deck and physical measurements where possible. It should also be noted that the diving board was hoisted, and as such measurements to the plummet (tip of the diving board) were not able to be made. Noted measurements should be assumed to be approximate, but close to actual measurements.

The pool ranges in depth from 4'-0" to 12'-0". Starting blocks are provided at the deep end for race starts. There is a single 1-Meter diving board, centered on the deep end wall.

Spectator seating occurs in tiered bleachers rising from the pool deck at the west side of the pool. Access to the Locker Rooms, Coaches Office, Storage and the Pool Mechanical Room are directly off the pool deck. Portable bleachers are also deployed at the north end of the pool, on the pool deck.

Pool recirculation, filtration and chemical control systems are located in a Mechanical Room adjacent to the southeast corner of the pool. This room also houses electrical equipment which serves the pool, as well as areas of the school not related to the pool.

Pool decks are ceramic tile bulkhead curbs and resinous epoxy, on concrete slabs-on-grade. A stainless steel gutter was installed in 1997 at an elevation that increased the pool depth by about 12-inches. A bulkhead curb was installed at the pool perimeter to accommodate the elevated gutter, which is fully recessed at the touch walls and semi-recessed at the side walls.

The Natatorium is constructed of a steel girder and beam roof, bearing on concrete columns. Walls are concrete masonry units (CMU), with acoustical CMU at the upper half of the walls.

I. Introduction

Greenwich Public Schools has requested that TLBA provide a preliminary assessment of the natatorium and swimming pool at the High School, inclusive of the pool, pool decks, spectator areas and pool recirculation, filtration and chemical control systems to determine areas of concern with regard to compliance with Building and Fire Codes, Department of Health Regulations, Americans with Disabilities Act (ADA), Virginia Graeme Baker Pool and Spa Safety Act (VGB) and other applicable standards.

The site is complicated by contaminated earth and groundwater, as the school was built on a Brownfield Site. Any renovation plan that requires excavation or dewatering will require input from the Town's environmental consultant to address concerns with the disruption of groundwater and soils.

The goal of this effort is to identify deficiencies related to the following:

- System operation and compliance with applicable Codes, including DPH and VGB.
- Anticipated life cycle of existing or recommended equipment, architectural systems and finishes.
- Filter plant layout, access, and efficiency.
- Review of Natatorium and Filter Room structural systems, and narratives of structural approach for potential additions.
- Review of Pool and Natatorium geometry to verify compliance with standards
- Review of Natatorium and Pool-related Mechanical, Electrical and Plumbing systems.
- Review of Site Development requirements associated with site utilities and additions. Site related issues related to contaminated soils and groundwater will be the responsibility of Greenwich Public Schools.

Based on the results of the analysis, combined with related analysis of other disciplines, this report contains a written Facility Conditions Assessment and Planning Options. A Rough Order of Magnitude Costs is provided for planning purposes.

II. Executive Summary

The Greenwich High School Pool has been a community asset since 1968, when it was constructed as part of the Town's new high school complex. Generally, the overall facility has been cared for and is well maintained. However, swimming pools and natatorium spaces are harsh environments, subject to water, moisture, high humidity, chemical exposure and heavy use. As a result, certain components of the facility are showing its age and it is in need of a significant renovation to ensure its long-term viability. Also of concern are non-compliance issues with regard to VGB and Public Health Code Regulations.

This report identifies a number of issues to be addressed, as well as options for resolution. The degree of urgency varies, but the ones of most concern are as follows:

VGB Compliance: The Virginia Graeme Baker Pool and Spa Safety Act became law in 2008 as a means of reducing the risk of entrapment and entanglement drownings in public swimming pools. It is important legislation and by all metrics a good thing for the pool industry. However, during the roll-out in 2008, upgrades were mandated with little grace period, a patchwork of guidance and a lack of equipment that met the requirements of the law. Greenwich Public Schools proactively sought to comply with the law and shortly after its enactment installed new main drain covers on existing sumps. This was consistent with the practice at the time, and in accordance with guidance provided by the Consumer Product Safety Board. However, the rules regarding main Drains and Suction Outlet Fitting Assemblies (SOFA) and sumps have been clarified and new standards went into effect in 2021. Of note is that under the VGBA, drain covers manufactured on or after November 24, 2020 will be required to comply with the updated standard. Non-compliant installations, whether caused by non-compliant installations or expiring covers, are not grandfathered and must be replaced.

The existing configuration has a pipe stubbing up through the floor, approximately 2" lower than the finish floor of the pool. VGB compliant drain covers are installed, but are on a sump and pipe configuration that is not compliant. As such, modifications are required to the sump in order to make the entire assembly VGB compliant.

At this point, whether the existing Drain was considered compliant at the time of the installation or not is immaterial, as the covers have expired and must be replaced in a manner consistent with the new regulations. Field built sumps are no longer allowed unless the entire assembly is approved by the cover manufacturer. This report provides a recommendation to install fully compliant drains.

II. Executive Summary

Diving Clearances: The State of CT's first formal Building Code was adopted in 1971. Since the building was constructed in 1968, we can assume for purposes of this study that there were no violations at the time of the original installation of the Diving Board. In 1997, as a result of raising the pool water level approximately 12-inches, the requirements of the Codes applicable at the time apply. For the Building Code, that was the 1994 State Building Code, which included BOCA 1990 with CT Supplements. CT Supplement 623.1.1 referred to the Health Department Regulations for "substantial renovations".

The Health Code at the time required an overhead clearance of 15-feet above the board, extending 16-feet ahead of the board and 8-feet behind and to each side, measured from the center of the tip of the board. The 16-foot long diving board, which was installed in the 1997 renovation, had a requirement for overhead clearance to comply with NCAA regulations, by reference in the DPH Regulations. The NCAA Regulations (since March 3, 1991) requires 16'-5" above and ahead of the board and 8'-3" behind and to the sides, again measured from the center of the tip of the board. Refer to Appendix 5 for Diving Well Regulations in effect at the time of the 1997 Renovation.

Currently, there is a steel girder approximately 12-feet above and 6'-2" ahead of the board in violation of the requirements, and posing a risk to divers. In addition to the girder, other steel structure, ductwork and piping encroach on this clearance. It also appears the entire roof deck is lower than the 16'-5" high clearance requirement. This report addresses the issue with graphics and photographs, and offers a potential solution for planning purposes, recognizing that further discussion is required to align the project approach with the long-term goals of the School. Options may include eliminating the diving board from the pool, raising the roof structure, which may be impractical, or expanding the footprint of the Natatorium to construct a taller space to accommodate the diving well. Constructing a new facility in another location is also an option, but the scope of this report focuses on the High School Pool options only.

Pool Decks: In the 1997 renovation, in order to achieve greater pool water depth, a bulkhead curb was added to the pool perimeter, and the diving board was mounted on a platform that bisects the deck so it is not continuous around the pool perimeter. This presents issues with access and accessibility that is non-compliant with Health Code Regulations, which requires a minimum 5-foot wide deck around the pool perimeter, including behind the diving board. This requirement is noted in the 1997 DPH approval. As currently configured, deck width is reduced to about 3-feet for a 55-foot long length of deck at the along the east side, and is eliminated behind the diving board. This would prevent a medic from walking along side a gurney in the event of an emergency, inhibits two-way circulation during a meet, where meet officials walk the length of the deck during swim meet or water polo match, and limit maintenance access equipment to a small scissor lift.

In addition to the pool deck width issue, the Health Code prohibits spectators from sharing deck space with swimmers. In the current configuration, spectators enter from the SE and SW corner onto the pool deck to access fixed seating to the west and portable bleachers to the north. At the SW corner of the pool, near the storage room doors, there is a significant low spot that does not drain. Spectators would need to traverse this standing water to get to the seating.

II. Executive Summary

Recirculation, Filtration and Chemical Control Systems: The existing pool mechanical systems are located in a utility space of approximately 430 sf, located off the southeast corner of the Natatorium. In addition to the pool recirculation, filtration and chemical control systems, the Mechanical Room provides space for an electrical main distribution panel and an acid neutralizer from labs outside the area of the pool.

The pool filter system includes two, dual-cell vertical high-rate sand filters, which is different than the 1997 DPH approved bank of (6) smaller filters. The installed filters are showing signs of failure and are need of replacement. It was also noted that the filters backwash to an outlet at a brook on the site, which is not an acceptable approach, as backwash discharge is chlorinated greywater and should be discharged to sanitary sewer. The 1997 DPH approval notes backwash is directed to sanitary sewer, not storm. There is a sanitary sewer ejector system in the filter room that may be usable for backwash, but this needs to be further investigated for capacity, condition and point of discharge.

The electrical equipment located in this room includes a 480v main distribution panel that serves about half the school. Typically, electrical equipment not directly associated with the pool equipment would be located in a separate area, as the pool equipment room is wet and caustic, due to storage and use of chemicals. When unavoidable, the electrical equipment should be NEMA-rated for corrosive, damp environments (NEMA 4X), which this equipment is not. Additionally, there does not appear to be sufficient clearance in front of the electrical equipment, as required by the National Electrical Code.

Break Line: DPH requires a 4-inch wide, contrasting color band at the break point, where the pool transitions into the hopper at the 5-foot depth line. There is no such demarcation in the pool.

Depth Markings: DPH requires depth markings at the vertical face of the pool above the waterline, visible from inside the pool. Depth markings are present on the curb around the deck, but not on the vertical wall above the water, and as such, they are not visible from in the water.

Light Levels: Sanctioning bodies for competitive water sports recommend 100fc of lighting at the surface of the water, without glare. Light levels at the pool were measured at 50—52fc.

Pool Finish: While not observed as part of this report, due to water in the pool, it has been reported that there are tile leaks and seepage and that renovation of pool finishes is required. This can be tile repair and grout, PVC liner or stainless steel retrofit pool. Choosing the best approach will require additional evaluation. Appendix 4 provides options for rehabilitation of the pool shell.

III.Existing Conditions Analysis

1. Swimming Pool, Finishes and Recirculation, Filtration and Chemical Control Systems

The swimming pool at Greenwich High School is a cast-in-place concrete structure with a ceramic tile finish. The gutter is a stainless steel perimeter gutter, fully recessed at the touch walls and semi-recessed at the side walls. Decks are ceramic tile bulkhead curbs and resinous epoxy on concrete slab-on-grade.

Four pool main drains located at the deep end of the pool are an integral part of the pool's recirculation system. These drains connect to a surge tank located exterior to the building, through a modulating valve, which automatically adjusts the flow to ensure water level in the pool is maintained as swimmers enter and exit the pool.

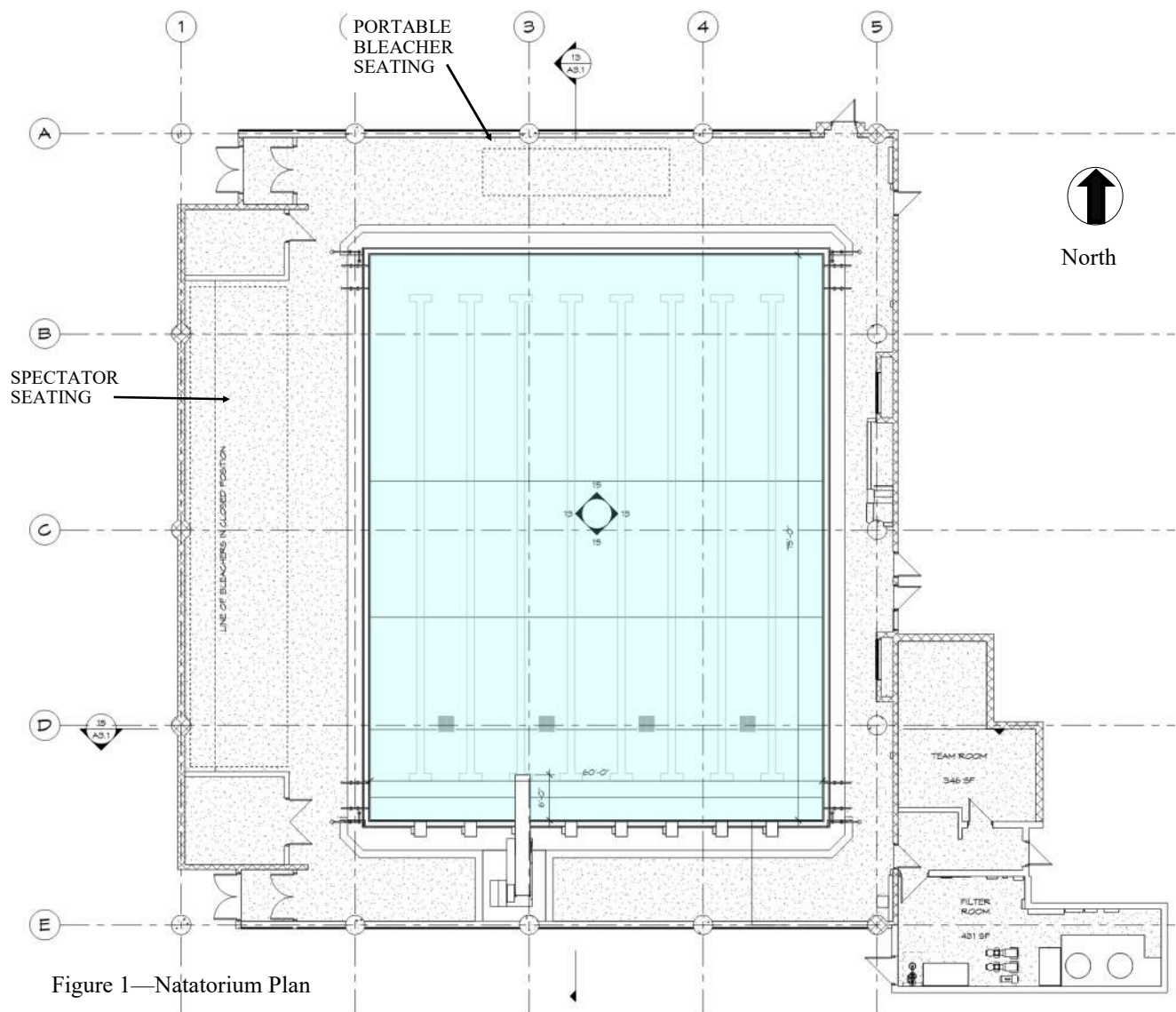


Figure 1—Natatorium Plan

III.Existing Conditions Analysis

1. Swimming Pool, Finishes and Recirculation, Filtration and Chemical Control Systems

The pool is located in a Natatorium constructed with concrete columns supporting a steel roof structure. Walls are concrete masonry, with glazed windows to the north and south. The pool is 4-feet deep at the shallow end, sloping to 6-feet deep over 30-feet. Water depth then transitions to 12'-0" deep at the diving well.

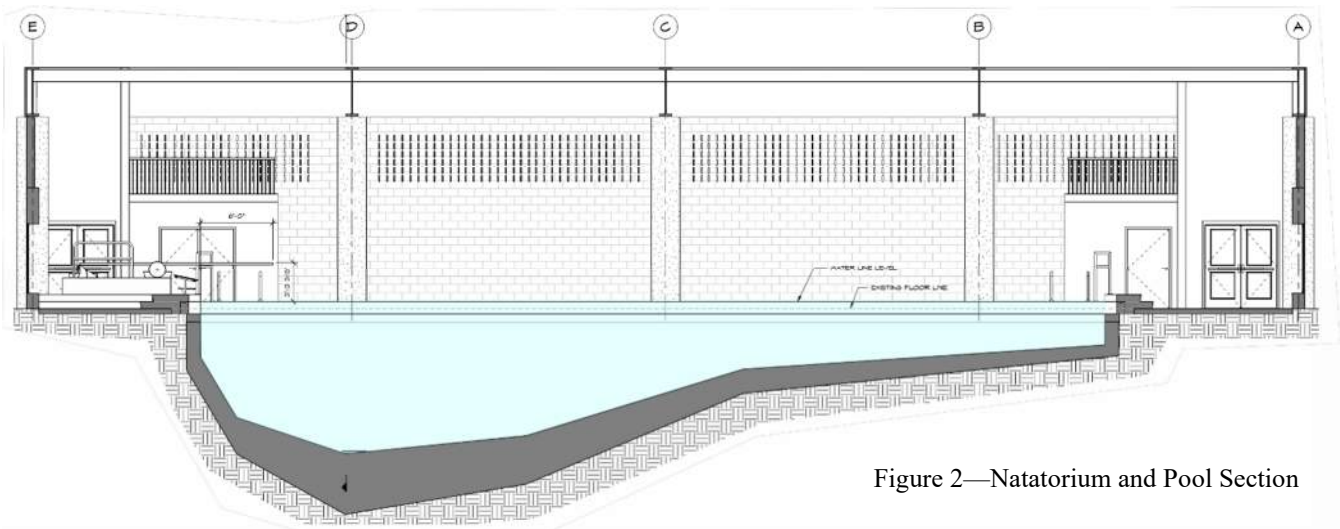


Figure 2—Natatorium and Pool Section

The main pool recirculation pump draws water from the surge tank and directs it to two, dual cell high-rate sand filters, where it is cleaned, then chemically treated, heated and returned to the pool through an integral return line in the stainless steel perimeter gutter.

The pool uses calcium hypochlorite tablets in an erosion feeder as disinfectant and uses Dry Acid in an erosion feeder for pH correction. Pool water chemistry is maintained by an automatic chemical controller, which automatically senses chlorine and pH levels and adjusts chemical introduction into filtered water return piping based on predetermined setpoints. Pool water heat is maintained through a shell and tube heat exchanger, with the source of heat being a building boiler, located outside of the Filter Room.

The pool volume is 304,500 gallons. The recirculation and filtration system operates at 635 GPM, resulting in an 8-hour turnover rate, which is the maximum allowable by DPH. If flow rate decreases even slightly, the pool will be out of compliance.

Main drain piping to the surge tank is 6" diameter and operates at 7.2 fps, which exceeds the allowable velocity of 6 fps as indicated in the DPH regulations.

Surge tank volume is unknown but should accommodate 1-gallon of operating capacity for every square foot of water surface area, which would be 4500 gallons.

III.Existing Conditions Analysis



Photo 1 (Above): Overall view of pool from shallow-end. Pool edge is built up with a bulkhead curb and steps to form a recessed gutter on the touch walls.

Exposed steel structure is painted and appears to be in good condition, with minimal indications of rust or degradation. Pool lighting and south facing glass results in glare on the surface of the water which is less than optimal for guarding, officiating meets and diving. Light levels are about half of that recommended by sanctioning bodies.

Photo 2 (Right): At the sidewalls, pool gutter transitions to semi-recessed, with a bulkhead curb lower than that at the touch walls.



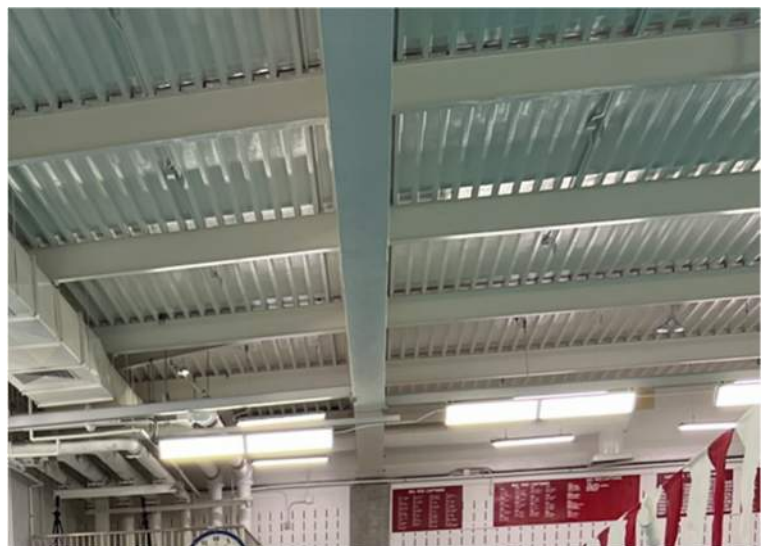
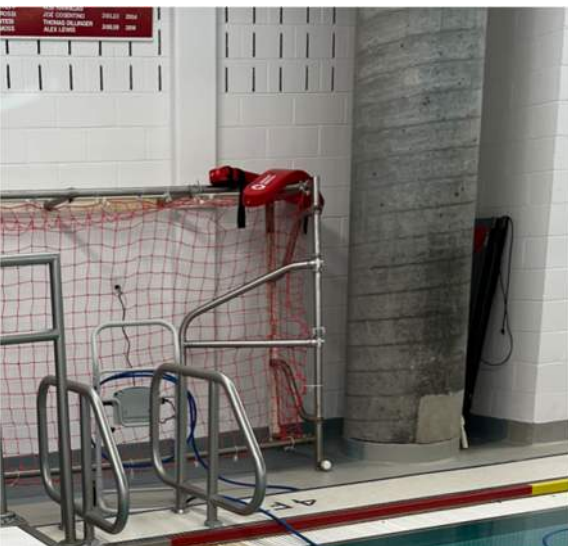
Existing Conditions Analysis: Page 3

III.Existing Conditions Analysis



Photo 3 (Left): The Natatorium structure is comprised of structural steel girders, spanning 95-feet, supporting steel beams and deck. The girders are supported by round cast-in-place concrete columns. Perimeter walls are concrete masonry units (CMU) with acoustical CMU in the upper half of the wall. All structural systems appear to be in good condition. Refer to Appendix 1 for Structural Engineer's Assessment.

Photo 4 (Below Left): Typical concrete column supporting steel girders.



III.Existing Conditions Analysis

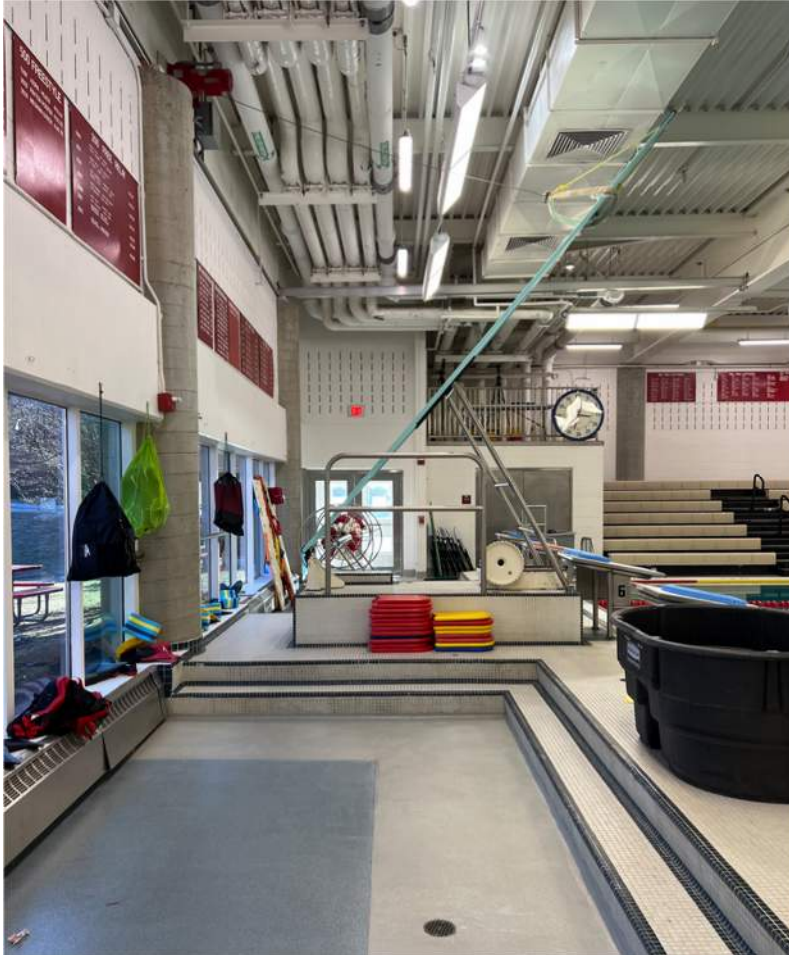


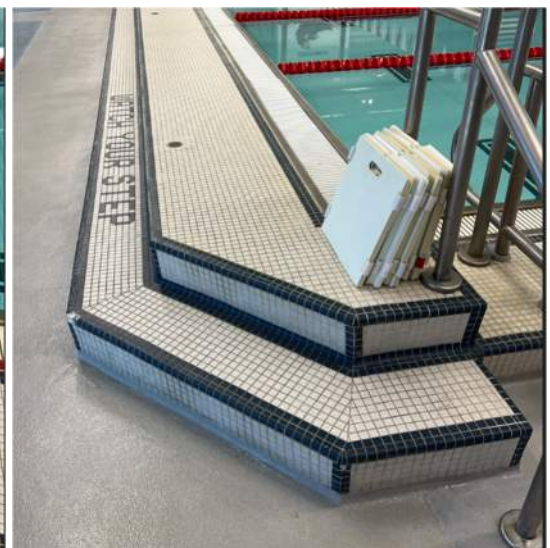
Photo 6 (Left): Pool decks are resinous epoxy with individual floor drains located around the pool perimeter. At the diving board a multi-level, tiered platform is provided to achieve the proper elevation to mount a 1-meter, short-stand diving board. The deep end of the pool also has an extended bulkhead curb to provide mounting space for competitive starting blocks.

Clearance over the diving board is reduced by means of a steel girder, steel beams, sprinkler piping and ductwork (see Figure 3).

Radiator cover should be repaired to eliminate hazard.

Photo 7 (Below Left): The bulkhead curb transitions from fully recessed at touch walls to semi-recessed at side walls.

Photo 8 (Below Right) Steps to raised bulkhead at shallow-end touch wall.



III.Existing Conditions Analysis

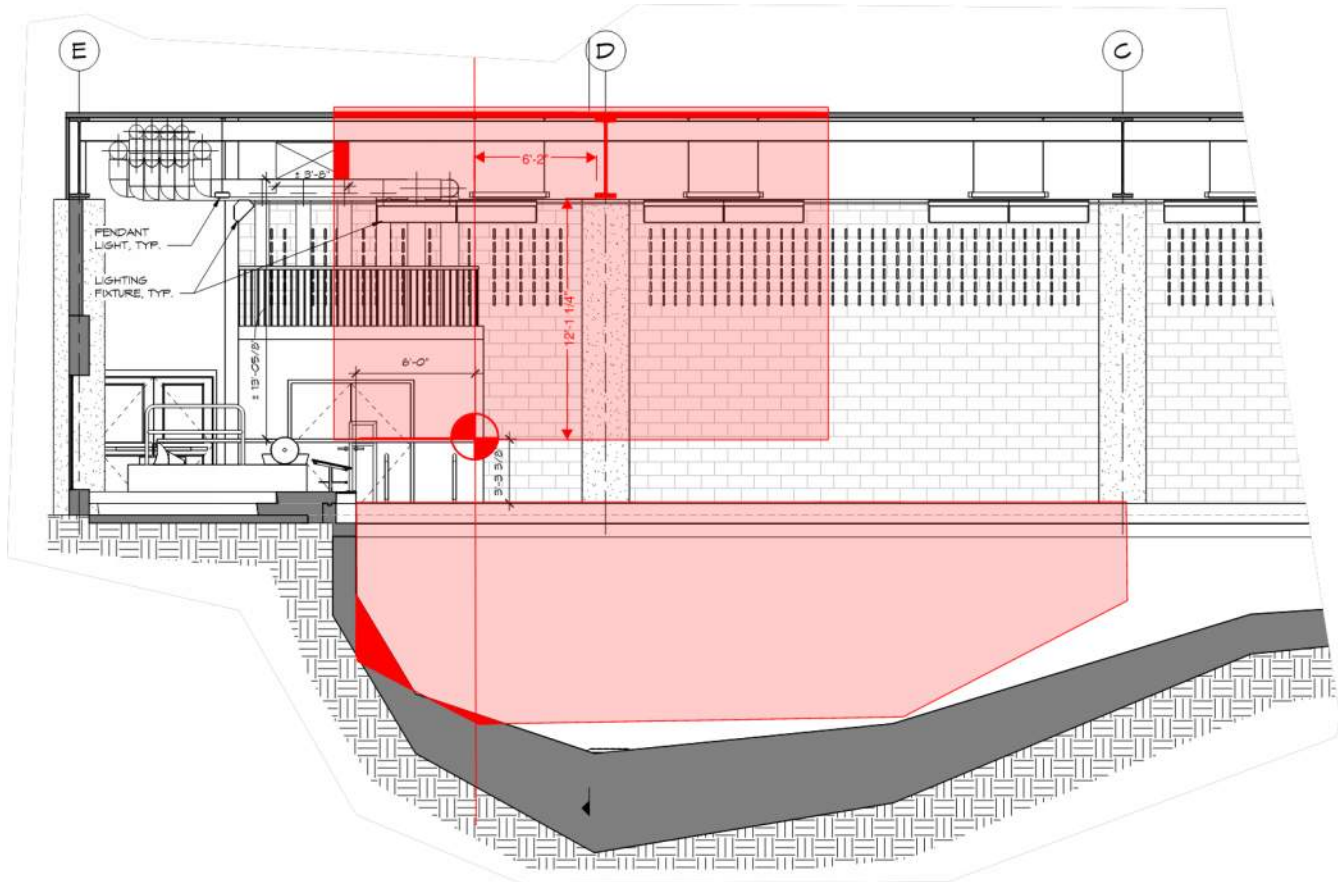


Figure 3: Above is a pool section at the Diving Hopper. Drawing in black indicates existing conditions. Light red indicates the minimum clearance required at the diving board, both overhead and below the water line. The dark red indicates objects that are in conflict with the clearances required.

The Red Target indicates the “Plumet” which is the center of the tip of the diving board. This is the point where all clearances are measured from.

Overhead: There are major obstructions within the required overhead clearance, including a steel girder, about 4-feet lower and 10-feet closer than allowed. Also encroaching into the clearance is the roof beam and deck structure, sprinkler piping and ductwork. All of these elements are reachable from the diving board, as evidenced by a water bottle placed on the flange, and names written on the beam, which would require a diver to actually hang from the beam to write the name. It should also be noted that when the board needs to be replaced, no manufacturer will sell a board to a facility with a non-compliant diving area.

Pool Depth: It seems the added pool depth may have been related more to increased depth for water polo than for diving, as the depth (based on available documentation, not field verified) is several inches deeper than required at the Plumet, but is still non-compliant behind the board.

III.Existing Conditions Analysis



Photo 9: The steel girder, beams, ductwork and sprinkler piping are all within the required overhead clearance for diving, as shown in Figure 3.

Circled in the photo is a water bottle placed on the flange of the girder by a diver. Also visible in the photo are names that were written on the beam (obscured so as to not identify students). This could only have been accomplished by hanging from the beam long enough to write the name.

III.Existing Conditions Analysis



Photo 10: There are four main drains at the deep end of the pool. Each drain has a 10" diameter sump, approximately 7" deep, with a 6" pipe stubbed up to the bottom of the sump. The original sump is adjacent to the change in floor plane. As such, the frame and covers installed in 2008 were leveled on grout in order to properly secure them.

Modifications to the sumps, frames, grates and hardware will be required in order to fully comply with current VGB requirements.

However, even if the drains are reconfigured, the buried 6-inch diameter pipe is too small to comply with the DPH velocity requirements. It is also likely that the pipe configuration doesn't comply with requirements for safe drain operation.

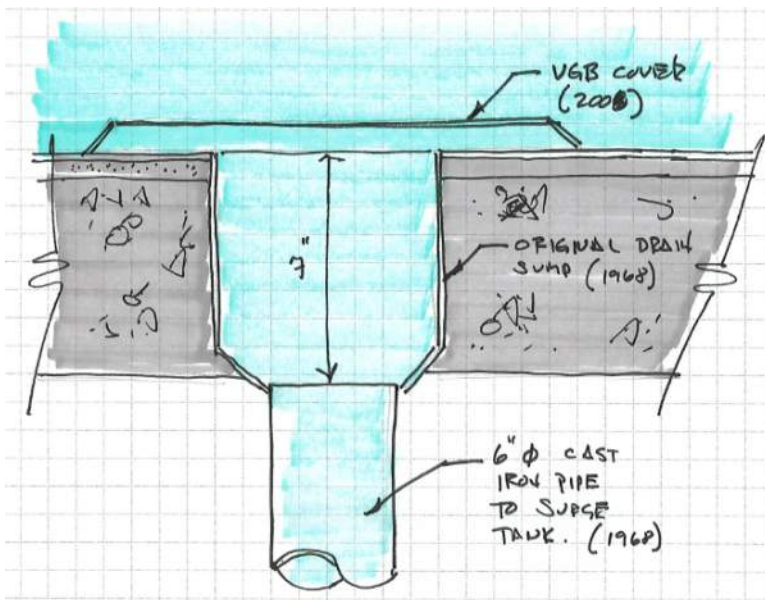


Figure 4: Existing Main Drain configuration, with 10" diameter, 7" deep sump and 6" diameter pipe to surge tank. There are four of these drains, piped in a series, as was typical at the time (1968).

Recent inspection of the main drain piping by the school's pool maintenance contractor indicates that there is significant tuberculation in the piping and only the drain furthest east is operable, and There is no flow through the other three.

III.Existing Conditions Analysis



Photo 11: To mitigate risk resulting from the main drain configuration, Greenwich Public Schools installed an emergency shut-off switch to shut down the pumps in the case of an emergency, releasing suction at the drains. Our understanding is that the shut-off plunger is staffed by a trained individual at all times when the pool is occupied.



Photo 12: The scorer's platform was constructed as part of the 1997 renovation, on the east side of the pool. It is not handicapped accessible and contributes to the narrow deck along that side of the pool. (See Photo 13)

III.Existing Conditions Analysis

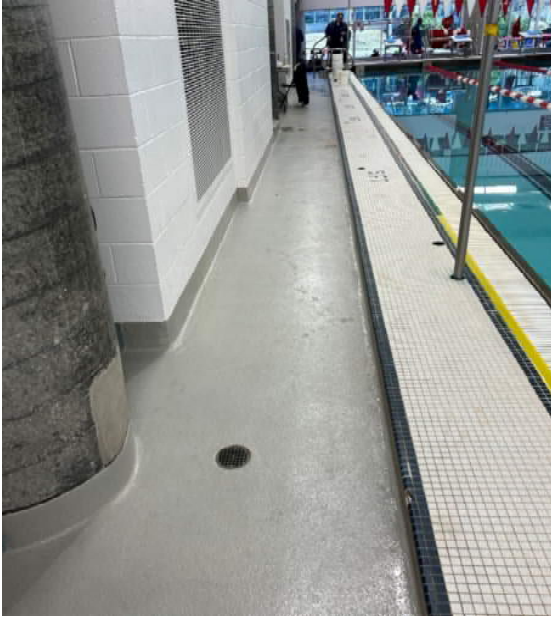
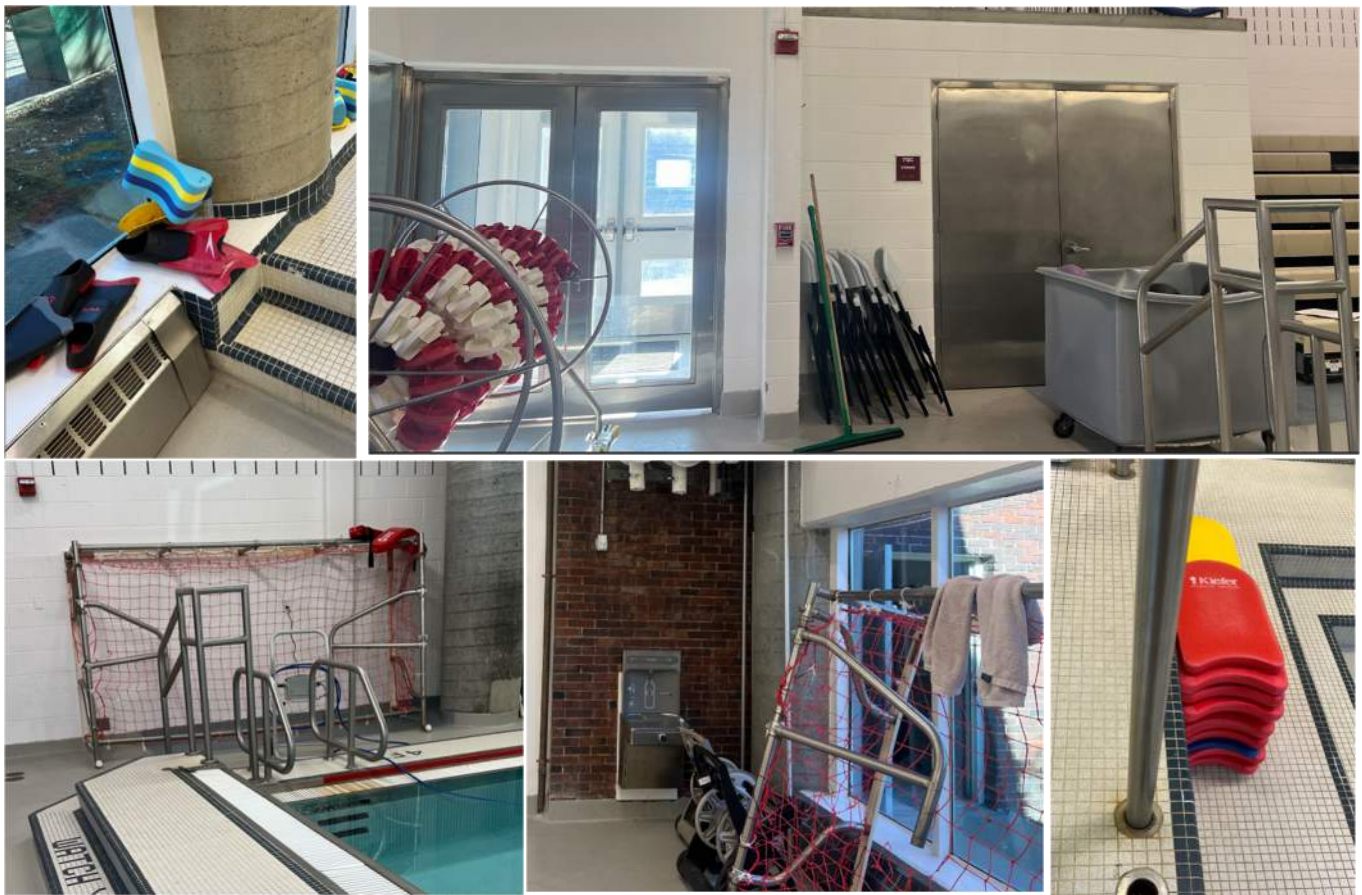


Photo 13: The pool deck at the east side is reduced to about 3-feet wide, well shy of the 5-feet required by the DPH regulations.

Photos 14 - 19: Pool decks are used for storage of pool equipment, further reducing deck clearance and maneuverability. Options for storage of equipment off of the deck should be explored. In addition to concerns over space restrictions, storage of wet equipment on window sills, bleachers, etc. will eventually cause damage those assemblies.



III.Existing Conditions Analysis

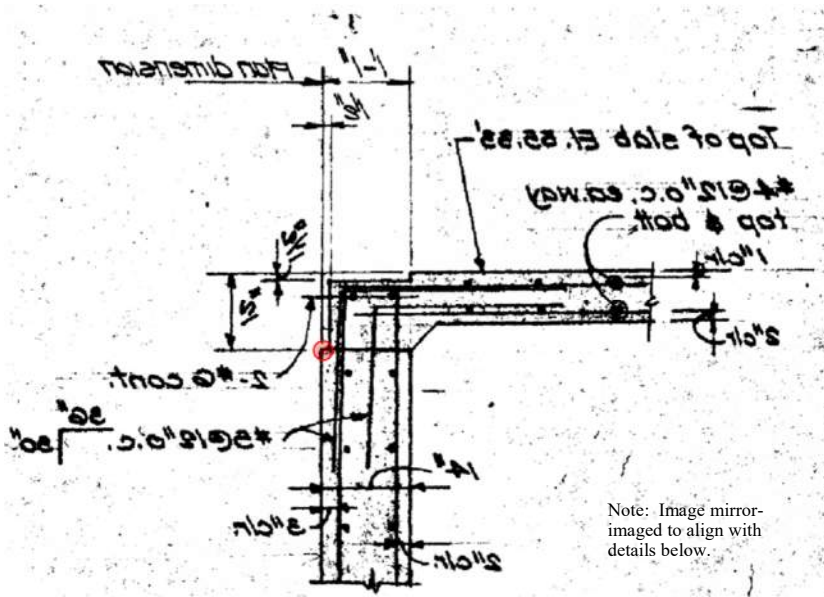


Figure 5: The original construction documents (1968) show the concrete configuration to accommodate a tile gutter or skimmer system. The gutter was removed in the 1997 renovation and the overbuild was constructed on top of the pool wall. (On the details, the red dot is a common reference point.)

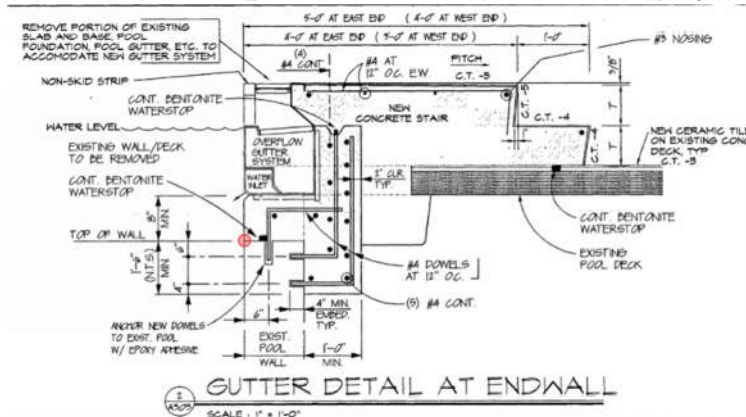


Figure 6: The 1997 construction drawings indicate a fully recessed stainless steel gutter at the touch walls, built on top of the existing pool wall and extending a total of 5-feet from the face of pool wall, onto the deck.

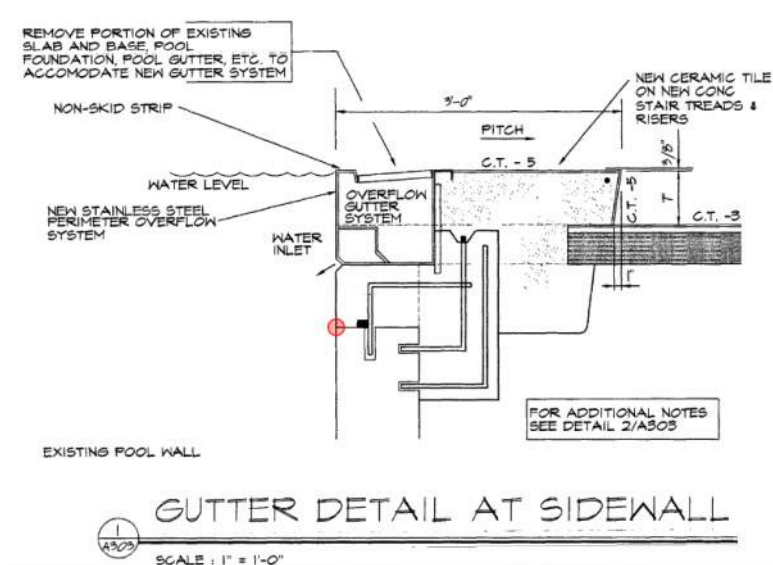


Figure 7: The 1997 construction drawings indicate a semi-recessed stainless steel gutter, built on top of the existing pool wall and extending a total of 3-feet from the face of pool wall, onto the deck.

III.Existing Conditions Analysis

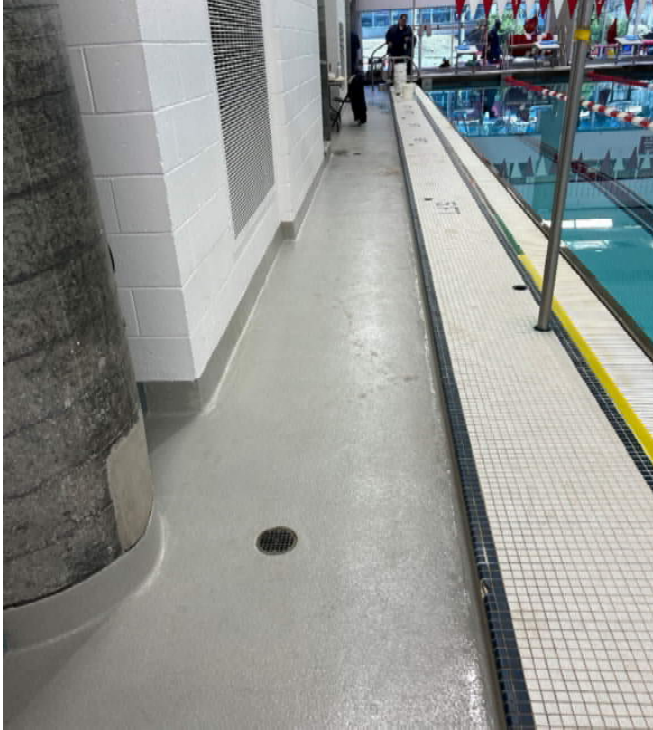


Photo 20, Left: The result of the overbuild as shown in Figure 7 is a reduced pool deck at both sides of the pool. At the east side, the deck reduction is most impactful, as it reduces the deck clearance significantly.

Photo 21, below: At the west side, there is more space, but the bulkhead curb reduces the available deck between the pool and the bleachers. DPH regulations prohibit deck being shared by spectators and swimmers. There is an attempt to distinguish these areas by use of color on the deck, but the Regulations require an “absolute separation”.



III.Existing Conditions Analysis



Photo 22, Above: Three sections of portable bleachers have been placed on the pool deck at the shallow end of the pool. When deployed, these virtually eliminate deck space along that end the pool. If used by spectators, the deck is shared by swimmers and spectators, which is prohibited by DPH.

Photo 23, Right: Entrance doors for spectators enter directly onto the pool deck at the north and south end of the west side of the pool. This leads to dirty decks, contamination of pool water, potential slip and falls and interference with meets.



III.Existing Conditions Analysis



Photo 24: (Left) Pipe pit provides an area way for piping into and out of surge tank, which is located below grade south of the Filter Room Wall.



Photo 25: The surge tank is comprised of two, pre-cast concrete tanks with manhole access at grade. The two tanks communicate by means of connection pipes that allow water to equalize in the tanks. Water gravity flows from the gutter drains into the tank. Main drain flow enters the tank through a modulating valve.

The main recirculation pump draws water from the tank to send it to the filters.

III.Existing Conditions Analysis



Photo 26: Dual recirculation pumps draw water from the surge tanks and send it to the filters. Pumps run in tandem to deliver 635 GPM through the system.

The small pump to the left is the booster pump for the chemical delivery system.



Photo 27: Pool water is filtered through two, dual-cell, high rate sand filters. Each cell has 12.57 sf of sand bed for a total of 50.28 sf. At a flow rate of 635 GPM, the filter operates at 12.63 GMP/sf, which is an acceptable filtration rate.

These filters were installed as part of the 1997 renovation. They are at the end of their useful life and need to be replaced.

Each cell is backwashed individually at a flow rate of 189 GPM. A typical 5 minute cycle will discharge 945 gallons per cell. When all four cells are cleaned, this is 3,780 gallons of chlorinated greywater to the brook at each complete backwash cycle. When filters are replaced, backwash water should be directed to sanitary sewer.

III.Existing Conditions Analysis



Photo 28: The proximity of the filters to the electrical panels is problematic, as is the storage of chemicals in close proximity to the electrical equipment.

A dedicated area for chemical storage should be provided, and nothing should be stored in the clear floor space in front of the panels.

Currently, there is only about 30-inches from the filter housekeeping pad to the face of the electrical equipment. This is less than required by the National Electric Code. Relocation of filters or reduction of the pad size is required. Alternatively, consideration can be given to relocation of electrical equipment.

Refer to CES report in Appendix for additional information on age and condition of the electrical systems.



Photo 29: Significant rust at the filter manways, indicates leaks and likely weakening of the pressure vessel's steel shell. It has been reported that filter media is discharged to the pool during backwash, indicating failed laterals within the filters.

III.Existing Conditions Analysis



Photo 30: Chemical control systems include a calcium hypochlorite erosion feeder for disinfectant and a dry acid erosion feeder for pH control. Chemicals are delivered in dry briquette form in 5-gallon buckets. A dedicated storage areas should be planned for chemical stock.

This system is appropriate for the pool and can continue use in a planned renovation.



Photo 31: Chemicals are automatically monitored and fed through a chemical controller. The Prominent Unit installed at the pool is relatively new and is appropriate for continued use.

III.Existing Conditions Analysis



Photo 32: An sewage ejector pit is located in the Filter Room. When renovations are planned, the capacity and location of discharge of this system should be confirmed to determine if it can be used for filter back-wash water, in addition to other sanitary waste it serves.



Photo 33: There is an acid neutralization system located behind the filters, that serves laboratories in another area of the building. Its condition and function was not reviewed as part of this report, but in a planned renovation it needs to be accounted for in the space planning.

IV. Planning Options

The varied issues related to Code Compliance, VGB Compliance, Life Cycle equipment replacement and deferred maintenance present the Greenwich Public Schools with decisions to be made regarding the long-term use of the facility and capital costs necessary to implement improvements. If issues are addressed individually, it will be difficult to bring the facility into full compliance. A thorough design phase will be required in order to optimize cost and outcomes. This section of the report provides scenarios and options for consideration, but should not be considered recommendations without further due diligence.

VGB Compliance: VGB compliance requires that the drain sumps and covers be replaced with an assembly certified by the drain cover manufacturer. However, it is important to note that a drain upgrade that brings the pool into compliance with VGB, without a piping replacement, does not address Health Department violations related to the piping size and configuration. There is also information from the pool maintenance company that the piping is heavily tuberculated and three of the four drains have no flow. Below are some scenarios for consideration:

Option 1: Replace main drain sumps and covers. VGB compliance will be met but DPH requirements will not be met. There is also a risk lack of flow or pipe failure if pipes cannot be properly cleared and lined. There is some “surplus” pool depth that would allow sumps and drain covers to be installed with little to no demolition of concrete. Utilizing a system such as Aquastar VGBA 1824-18f would provide a retrofit solution if properly installed.



VGBA-2017 PRODUCT SPECIFICATIONS
Suction Outlet Fitting Assembly (SOFA)
VGBA-2017 Flow Ratings, Sump Dimensions,
and Sump Flow Path Zone



Certified to
NSF/ANSI/CAN 50
ANSI/APSP/ICC 16 - 2017

DIRECTIONS: Read and follow the instructions provided with the product. Never exceed a SOFA Model flow rating when the pool is in use. SOFA Covers shall only be installed over sumps that meet or exceed the minimum flow path zone defined by: minimum pipe size and sump exit orientation, and the minimum pipe depth. Please see page 2 of 2 for help determining the proper flow rating for any pipe size changes within 16 inches of the pool interior finish. AquaStar SOFA covers are authorized for use over any compatible manufactured or field-built sump (§ 3.5.1). Scan the QR code or visit: www.aquastarpoolproducts.com/flowcode for the most current version of these specifications, instructions, and product information.

Cover Model Number:
1824xxx



FIGURE 1:
SOFA Model Number Key

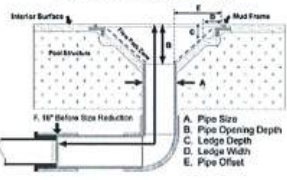
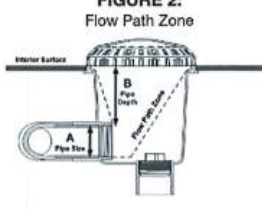


FIGURE 2:
Flow Path Zone

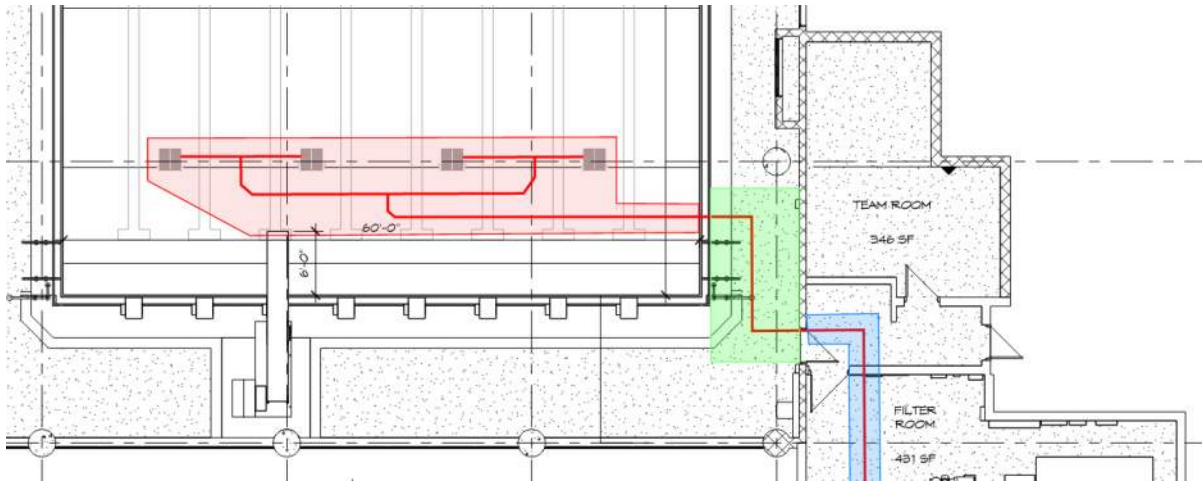




SOFA Model No.	(A) Pipe Size (Nominal)	(B) Pipe Depth (Minimum)	Orientation (Wall / Floor)	Flow Rating (GPM)	Head Loss Curve
1824-18f_A-1.5b_B3_C1.4_D1.4_E2.9_F16	1.5" (b)	3"	Floor (f)	126	A
1824-18f_A-2b_B3_C1.4_D1.4_E3.1_F16	2" (b)	3"	Floor (f)	168	B
1824-18f_A-2.5b_B3_C1.4_D1.4_E3_F16	2.5" (b)	3"	Floor (f)	250	C
1824-18f_A-3b_B3_C1.4_D1.4_E3.2_F16	3" (b)	3"	Floor (f)	288	D
1824-18f_A-4b_B3_C1.4_D1.4_E3.1_F16	4" (b)	3"	Floor (f)	398	E
1824-18f_A-6b_B3_C1.4_D1.4_E3.1_F16	6" (b)	3"	Floor (f)	590	F
1824-18f_A-8b_B3_C1.4_D1.4_E3.2_F16	8" (b)	3"	Floor (f)	590	G

IV. Planning Options

Option 2: For a fully compliant system, remove a portion of concrete pool floor to install new fully compliant sumps and drains, and properly configured piping. The pool floor is approximately 5-feet thick in the area of the drains. The approach would require removal of approximately 30" of concrete over an area of approximately 10-feet x 45-feet. It would also require remove of a portion of deck slab and excavation along the pool wall to the depth of the drain pipe.



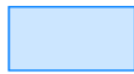
Pool Plan (Not to Scale)



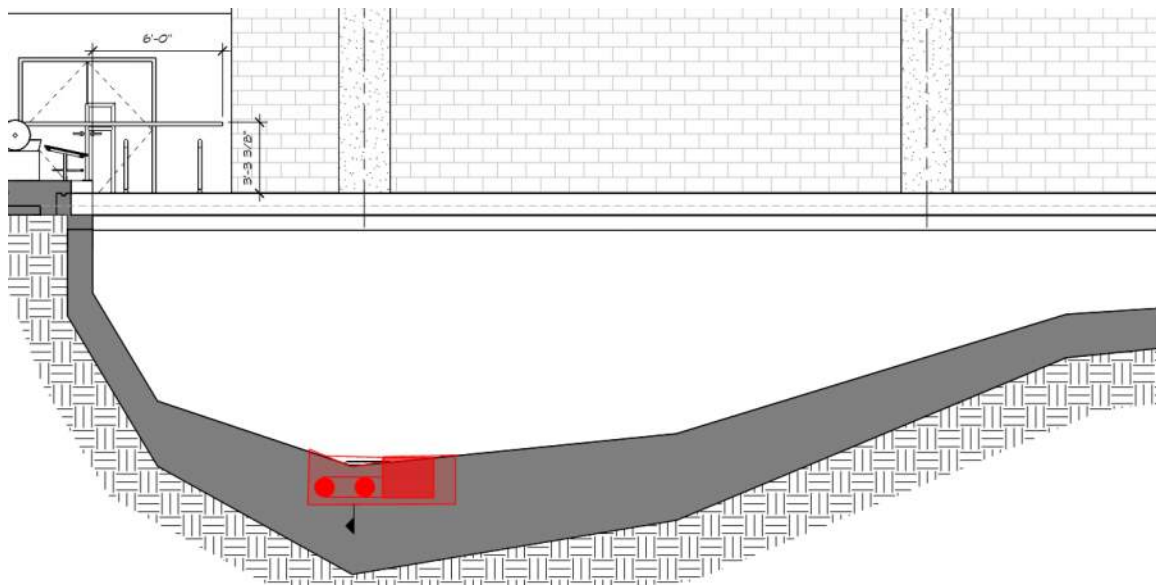
Sawcut and remove approximately 30" deep concrete for new drains and piping.



Remove pool deck and excavate to pool floor level for piping. Pipe to rise to about 4-feet deep



Trench floor and excavate for new piping to surge tank, approximately 4-feet deep.

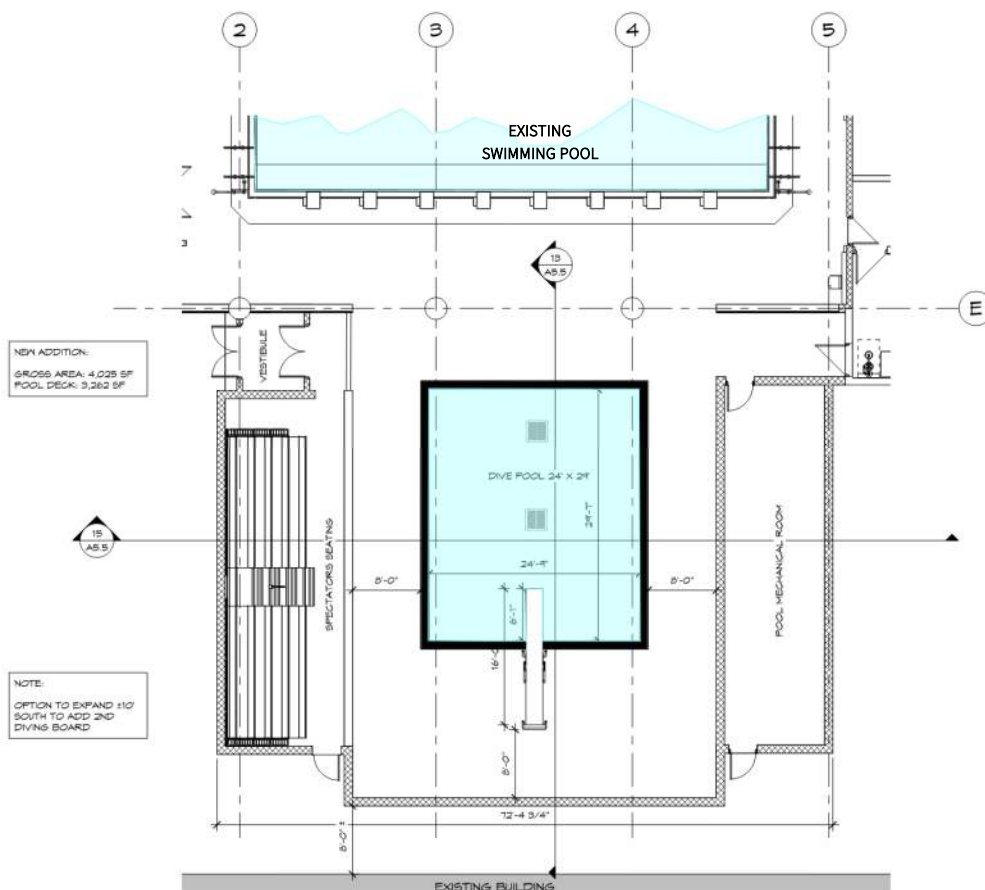


Pool Section (Not to Scale)

IV. Planning Options

Diving Clearances: Resolving the overhead clearance issue at the Diving Board will require a significant investment, or a significant change to the diving program. Short of building a new facility, there are three viable options to consider, as follows:

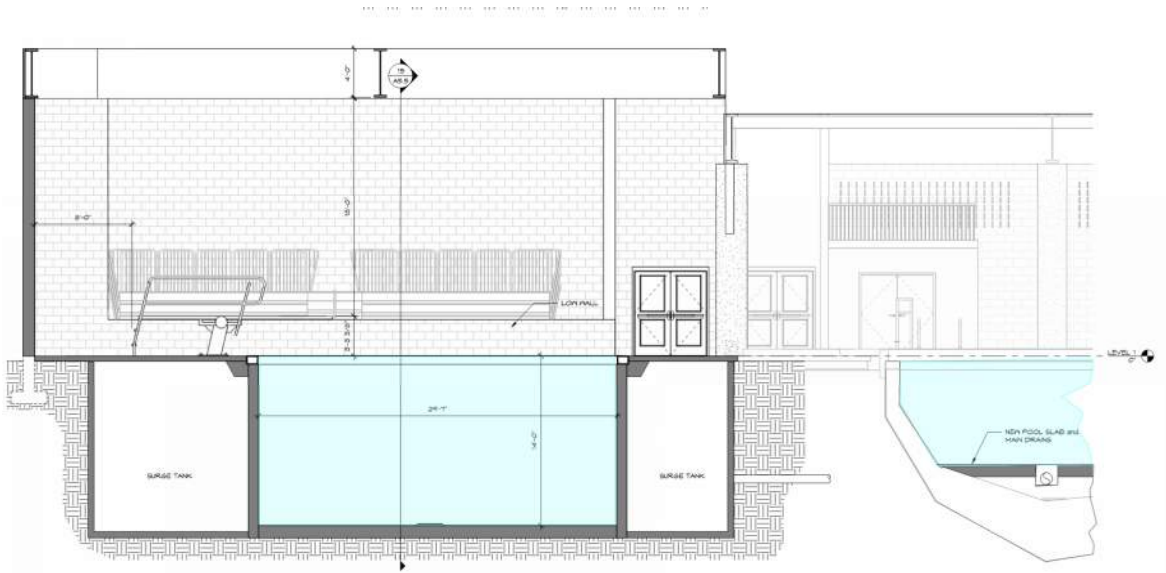
- Option 1: Eliminate diving program from the High School Pool. If the program is to continue, it would need to be done at another facility. If this option is pursued, drain and piping replacement gets significantly simpler, as piping can occur on top of the pool floor and the depth reduced to 9-feet or less. Decks and water level can then be returned to their original level, addressing deck clearance issues as well.
- Option 2: Raise the roof. This has not been explored for feasibility but in theory may be an option. However, if this option is pursued, it does not solve any of the other issues identified. It would be a costly endeavor and solve only one issue.
- Option 3: Eliminate the diving well as noted in Option 1 and add a diving facility outside the footprint of the existing building, where sufficient height and depth is achievable. Below is a concept for locating the addition on the south side, in the courtyard area. This approach can provide a solution to all issues identified in this report.



Floor Plan at Addition (Not to Scale)

IV. Planning Options

Option 3 (continued): Site utilities within the courtyard include electrical, storm piping and gas piping. All are original to the building and would require replacement in the proposed option. They could be re-routed further north and tie into the existing utilities where they enter the building.



Pool Section at Addition (Not to Scale)

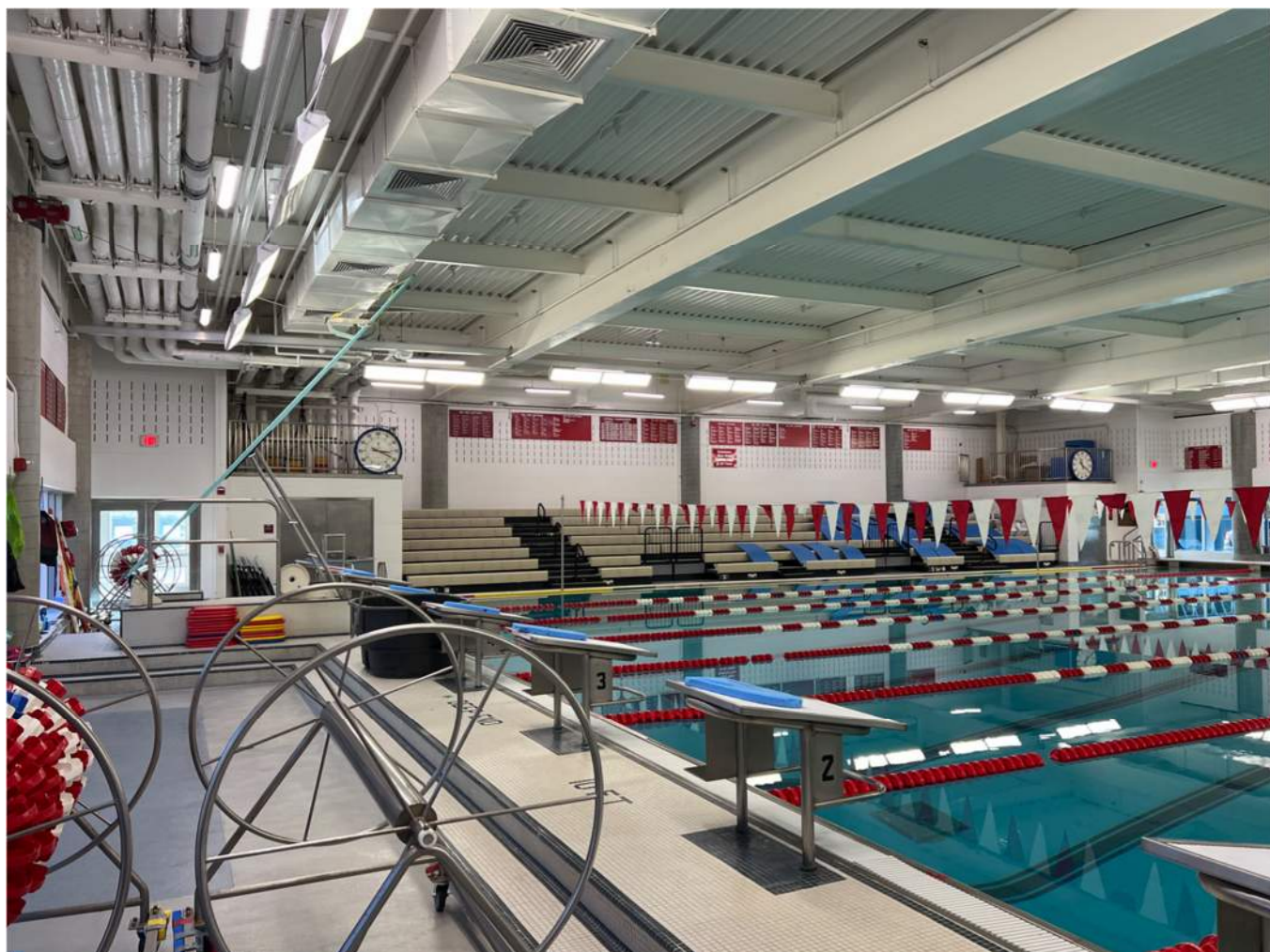


Site Location Plan (Not to Scale)

V. APPENDICES

Facility Assessment and
Recommendations for the
Swimming Pool at
Greenwich High School
Greenwich, CT

APPENDIX 01: E2—Structural Engineering Field Report



January 28, 2025

Mr. Michael P. Fortuna, AIA
Principal
TLB Architecture, LLC
92 West Main Street
Chester, Connecticut

Re: Review of Observed Existing Conditions
Greenwich High School Natatorium
10 Hillside Road
Greenwich, Connecticut

Dear Mike,

Per your request, e2 engineers (Engineer) has performed a site visit to the existing natatorium at Greenwich High School. The date of the Engineer's visit was Tuesday, January 14, 2025. The purpose of the Engineer's site visit was to observe existing conditions to compile a cursory structural condition assessment of the facility. The Engineer's scope was limited to the confines of the natatorium and mechanical room servicing the natatorium.

The existing natatorium measures roughly 95' x 105' and has a pool with eight swim lanes. The structure is comprised of structural steel girders spanning the 95' dimensions supporting steel roof beams and metal roof deck. The steel girders are supported by round cast-in-place concrete columns. The exterior walls are concrete block masonry walls.

The pool and pool deck are covered with ceramic tile. Per conversations at the site, the pool deck is constructed with cast-in-place concrete slab-on-grade all around. There is no crawl space tunnels around the pool structure. At the pool coping, the entrance to the pool has been elevated to achieve greater depth.

The pool will be undergoing renovations and one of the major components of the said renovation is the introduction of more pool drains along the deep end. Once concern in regards to this is the presence of a high water table. It is likely that dewatering wells will have to be constructed in order to cut the thickened mat slab at the deep end location. This dewatering will allow for the installation of new drainage systems.

There is a possible addition planned for the pool machine room due east of the natatorium that will most likely be a small structure with slab-on-grade construction.

Overall, the structure was observed to be in very good condition and the Engineer sees no major issues with the natatorium superstructure.

If you have any questions or concerns, please contact the Engineer.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'R. Scott Erricson', is written over the typed name.

R. Scott Erricson, PE
Principal
e2 engineers

V. APPENDICES

Facility Assessment and Recommendations for the Swimming Pool at Greenwich High School Greenwich, CT

APPENDIX 02: CES—MEP Report





Memorandum

Memorandum Date: 1/30/2025

Written To: Mike Fortuna, AIA

Project Name: Greenwich HS Natatorium Study

CES Project Number: 2025012.00

Regarding: Greenwich High School Natatorium Existing Conditions

Written By: Cody Pereira, Matt Olszewski

Dear Mike,

Pursuant to your request CES conducted a site investigation survey on Wednesday, January 15, 2025, of the existing Greenwich High School Natatorium located at 10 Hillside Rd, Greenwich, CT 06830. Our survey was focused on the existing electrical/pool equipment room located adjacent to the natatorium space as well as observations related to the natatorium space. The intent of this survey was to identify deficiencies of the equipment and spaces being served.

Mechanical:

The pool equipment space is currently served by means of mechanical ventilation and exhaust, exact airflow values were not able to be confirmed during our visit, however the space seemed adequately ventilated. The supply air duct routes over the top of the main electrical panels, within the 6ft clearance restriction. There were no current means of heating serving the space; the room gained heat from a partially insulated steam heat exchanger and sections of uninsulated steam piping located in the equipment room. Maintaining these systems in place, or modifying these systems to serve an alternate equipment/electrical location is feasible.

The natatorium is served by a single poolroom air handler located within a rooftop penthouse space. Precise date of manufacture of this unit is unknown, however is assumed to be original to the building. The ductwork distribution is comprised of two (2) metal supply air ducts located at the ends of the pool, and small branches to serve the spectator viewing area. The ductwork is painted, and did not show any signs of premature failure/deterioration from the pool deck viewing level. The supply grilles appeared in good condition and spaced well for distributed airflow. Return air is achieved by two (2) low wall return grilles of approximately 63"x52" size along the locker room side of the natatorium. The space appeared to be well ventilated and comfortable from a temperature control perspective. Large 4" diameter chilled water, and hydronic heating piping is routed overhead through the natatorium space along the diving board end of the pool. These pipes were noted to have adequate insulation and PVC protective shields both in good condition. Perimeter fin tube radiators are located at the ends of the pool to provide additional heating along the exterior windows. These radiators appeared to be in good condition.

Electrical:

The existing pool equipment room is also used as a building electrical closet, serving about 50% of the school. It is believed that the main distribution panel located in this room is served from the main electrical room located on the opposite side of the building which then goes on to serve larger pumps and HVAC loads as well as feeders to branch circuit panels throughout this portion of the building. A majority of the existing electrical equipment is past its intended lifespan and sourcing replacement parts will become more difficult as the likelihood of maintenance increases. Additionally, it should be noted that, although not observed to be a significant issue, electrical equipment installed in pool equipment rooms should be rated for installation in corrosive and damp environments (NEMA 4X), which is not the case. Lastly, in several instances, the electrical equipment installed appears to be shy of the National Electrical Code clearance requirements in front of the electrical gear.

For any major renovative work, it is highly recommended to isolate all the electrical equipment in this room to its own dedicated space. To minimize the extent of downstream electrical distribution rework, several NEMA 4X splice/ pull boxes can be installed (in the pool room) and the replacement electrical gear can be installed in a new dedicated room with the existing feeders and circuits extended from the current pool equipment space.

In regard to the natatorium space, the existing electrical systems appear to be in generally fair shape. The existing fire alarm devices appear to have been installed in the past decade without any noticeable concerns. Some miscellaneous electrical items include a water fountain, timing board, winch lift and an emergency power off button for the pool pumps. In all cases, the equipment appears to be in fair condition (equipment was not tested at the time of the visit). General pathway lighting was observed and turned on during the visit. Some areas, specifically in the corners of the space appeared to be a bit dim and additional general purpose lighting is recommended. Specialty light fixtures are installed and angled at the pool for additional lighting while activities in the pool are being conducted. Separate independently controlled, linear pendant hung, LED gasketed fixtures are installed above the stands which appear to be in good shape however, neither the stand lighting nor pool lighting could be turned on and tested at the time of the visit. Additional investigation will be required to confirm all fixtures work as intended. Exit lights are fully operational and in good condition. Emergency lighting could not be tested as classes were in session. Electrical devices (receptacles) are scarce in the space however, if there is no desire from the end user to have additional power throughout the space, the existing device layout can be considered sufficient.

Plumbing:

There are several floor drains of various sizes located within the pool equipment room. The presence of trap primers serving these floor drains were not able to be confirmed during our visit. Large sections of cold water, hot water, and steam piping were observed to be uninsulated throughout the equipment room. A 12" diameter cast iron pipe stub up serves as a drainage termination for the backwash tanks. It is the team's understanding that this pipe terminates to local stream. There is a large vault with cover grate that serves as the below grade entry point for the pool water supply and return. Through this same pit, there are three (3) 4" steel pipes that are capped off and abandoned; previous use unknown. There is considerable plumbing/pool related infrastructure located within this space routed overhead, and within the concrete floor slab. Relocation of such plumbing infrastructure is feasible, however invasive to the existing floor slab and alternate location due to excavation and connection points.

Plumbing services on the pool deck level are limited. A recently added wall hung electric water cooler with bottle filling station is located at the diving board end of the pool.

Fire Protection:

The natatorium is served by a fully sprinklered system that appears adequately spaced for coverage. The sprinkler heads are horizontal, exposed side wall type, positioned along the structural beams spanning the natatorium. The sprinkler piping, and heads appeared to be in good condition despite natatorium corrosive conditions.

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Option A
-Tennis Courts remain in the original location
-Renovate/ repair pool in existing location (Option 4.1)
-Roadway connecting western parking lot to Route 1

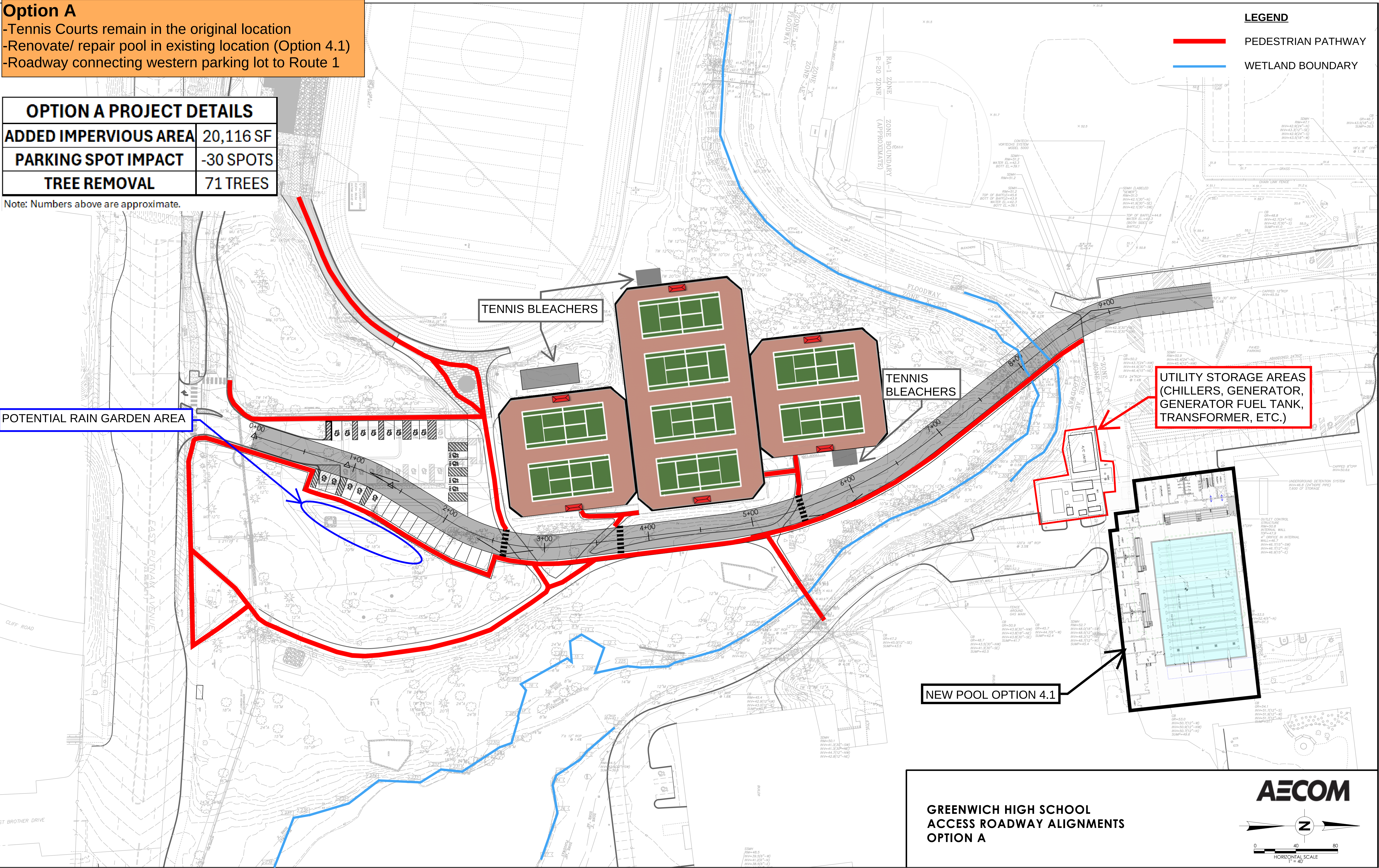
OPTION A PROJECT DETAILS	
ADDED IMPERVIOUS AREA	20,116 SF
PARKING SPOT IMPACT	-30 SPOTS
TREE REMOVAL	71 TREES

Note: Numbers above are approximate.

LEGEND

PEDESTRIAN PATHWAY

WETLAND BOUNDARY



GREENWICH HIGH SCHOOL
ACCESS ROADWAY ALIGNMENTS
OPTION A

AECOM

Z

0 40 80

HORIZONTAL SCALE
1" = 40'

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CONSULTANT:

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

REVISIONS

[illegible]

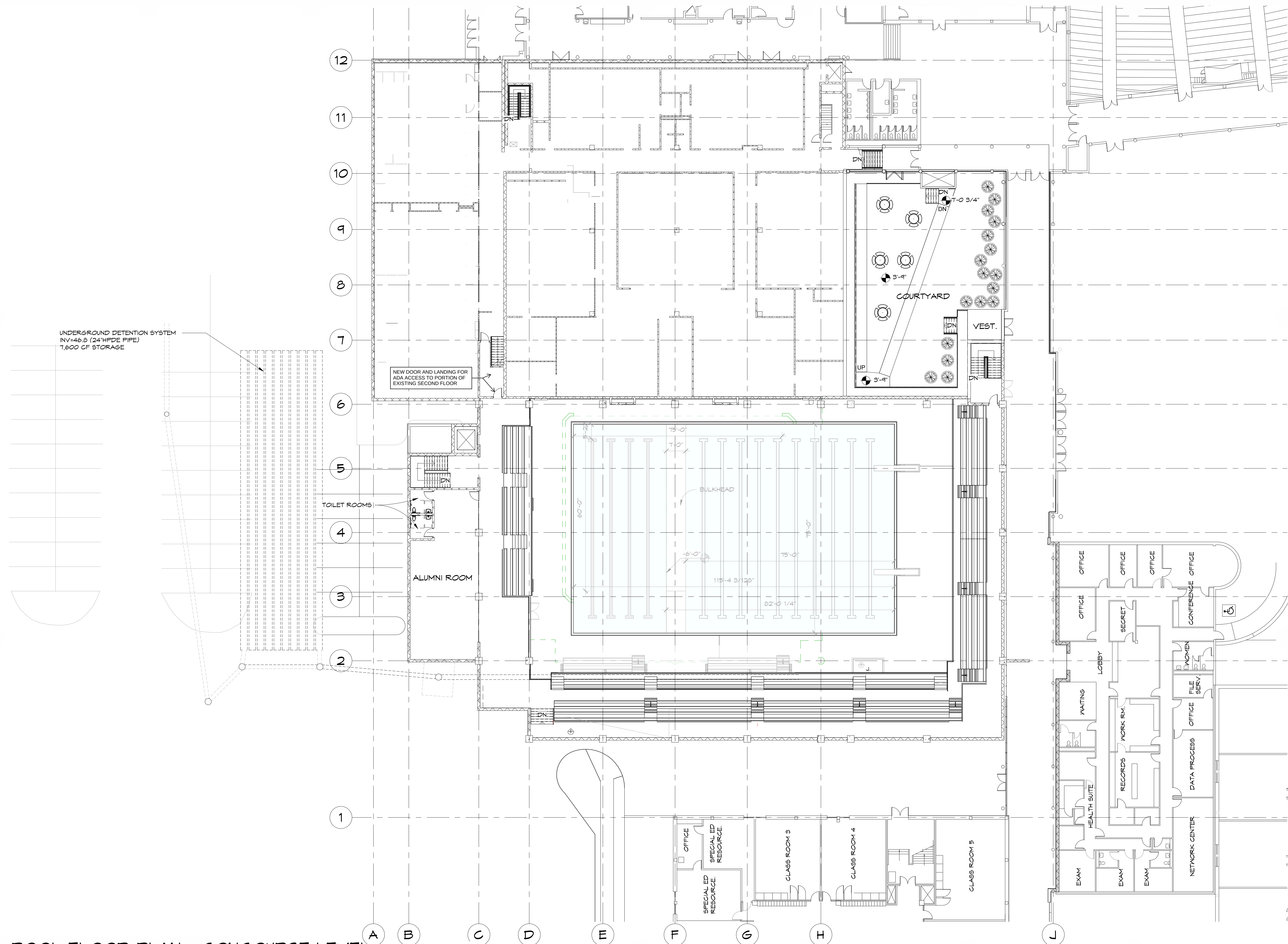
GREENWICH HIGH SCHOOL POOL
STUDY
10 HILLSIDE ROAD, GREENWICH,
CT 06830

DRAWING
TITLE:
CONCOURSE LEVEL
OPTION A

SCALE 1/16" = 1'-0"	DRAWN BY JY	REVIEWED BY Approver
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A2.2

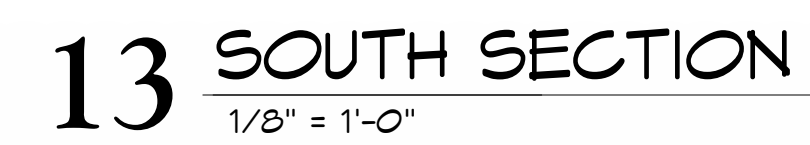
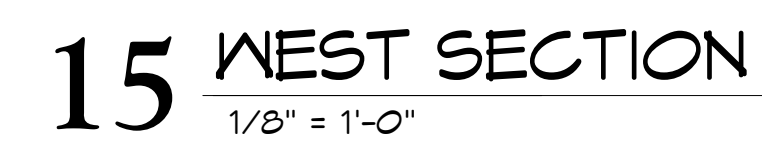
DATE 06/05/26	JOB NUMBER 2025.002
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13 POOL FLOOR PLAN - CONCOURSE LEVEL

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DATE	JOB
06/05/26	NUMBER: 2025.002



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DATE	JOB
06/05/26	NUMBER: 2025.002

